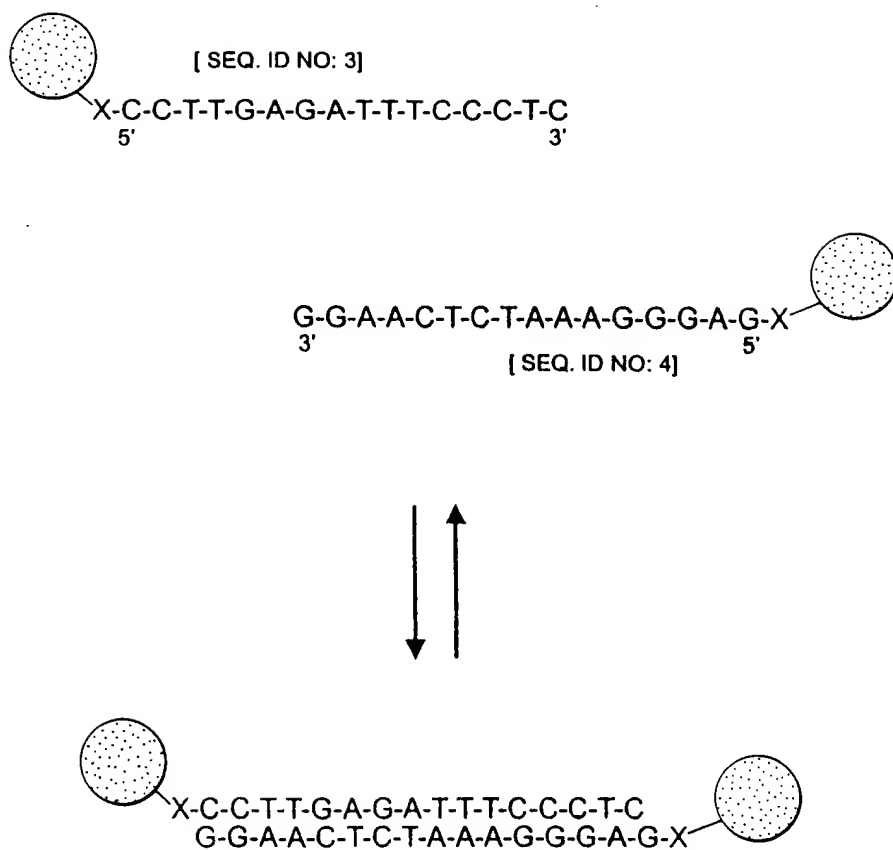




REPLACEMENT SHEET
Application No. 09/974,007
"Nanoparticles Having Oligonucleotides Attached
Thereeto and Uses Therefor"
Mirkin et al.
MBHB Case No. 00-713-i8

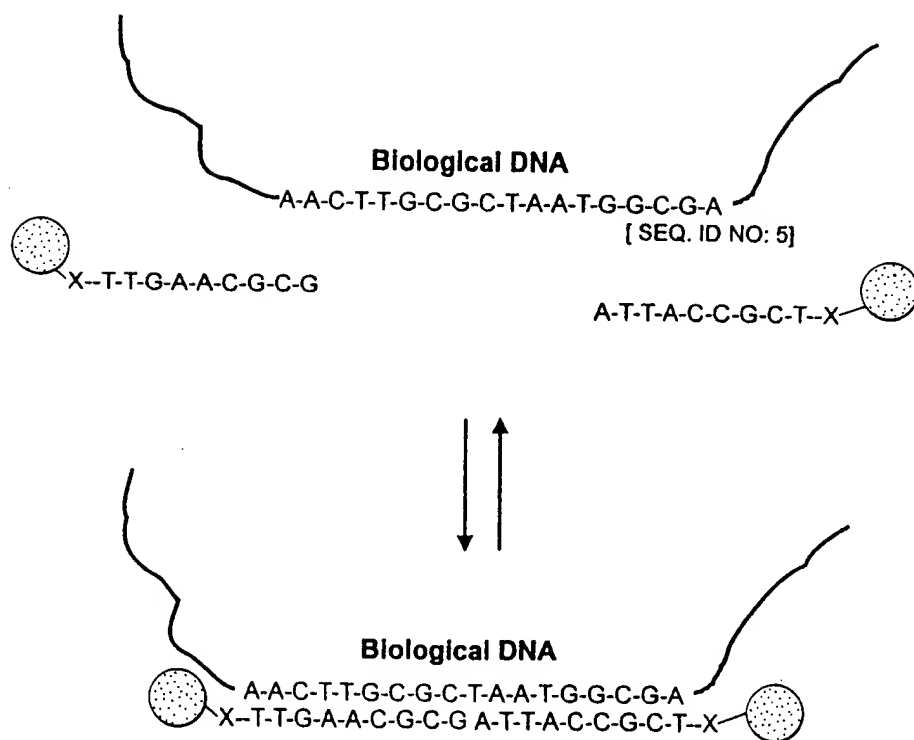
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FIG. 1



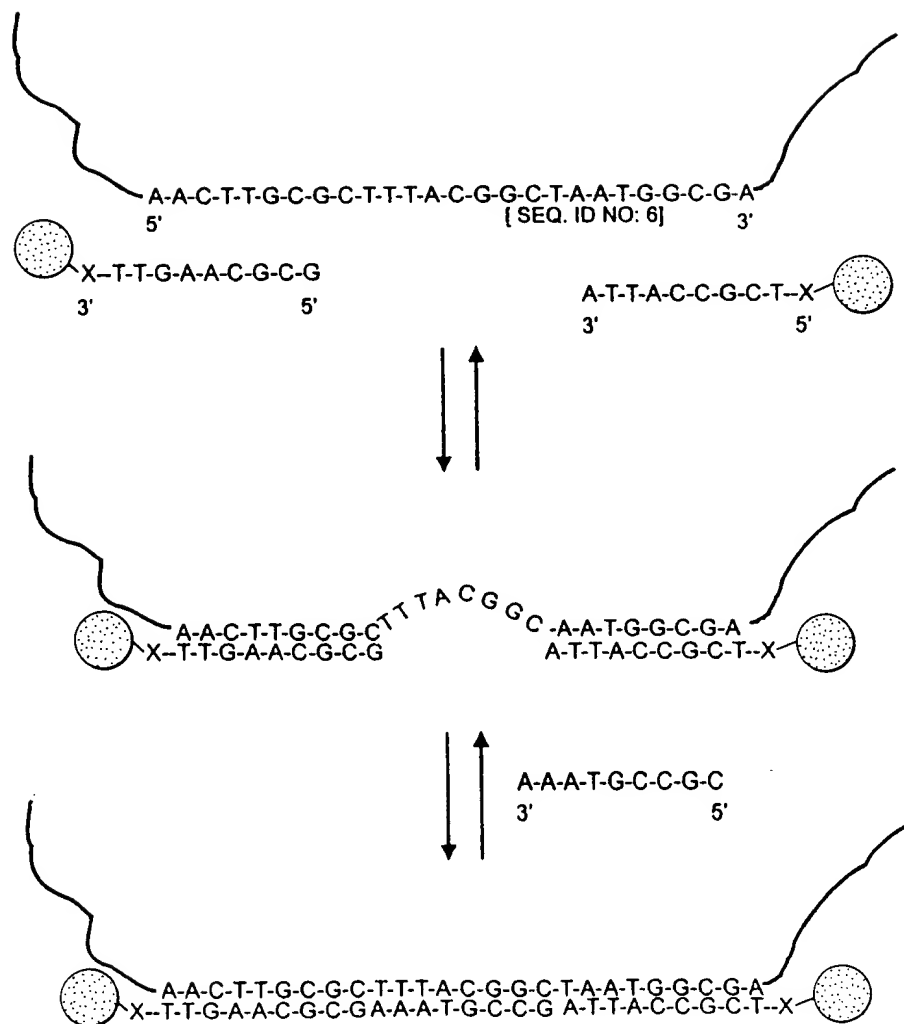
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FIG. 2



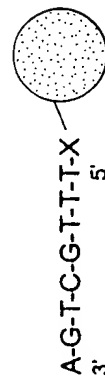
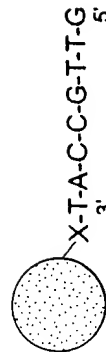
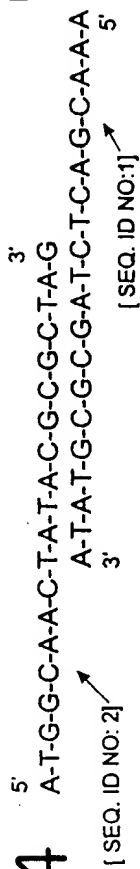
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FIG. 3



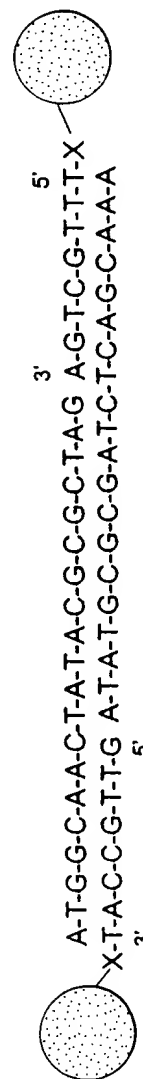
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Linking oligonucleotide



Heat
 Mix below T_m

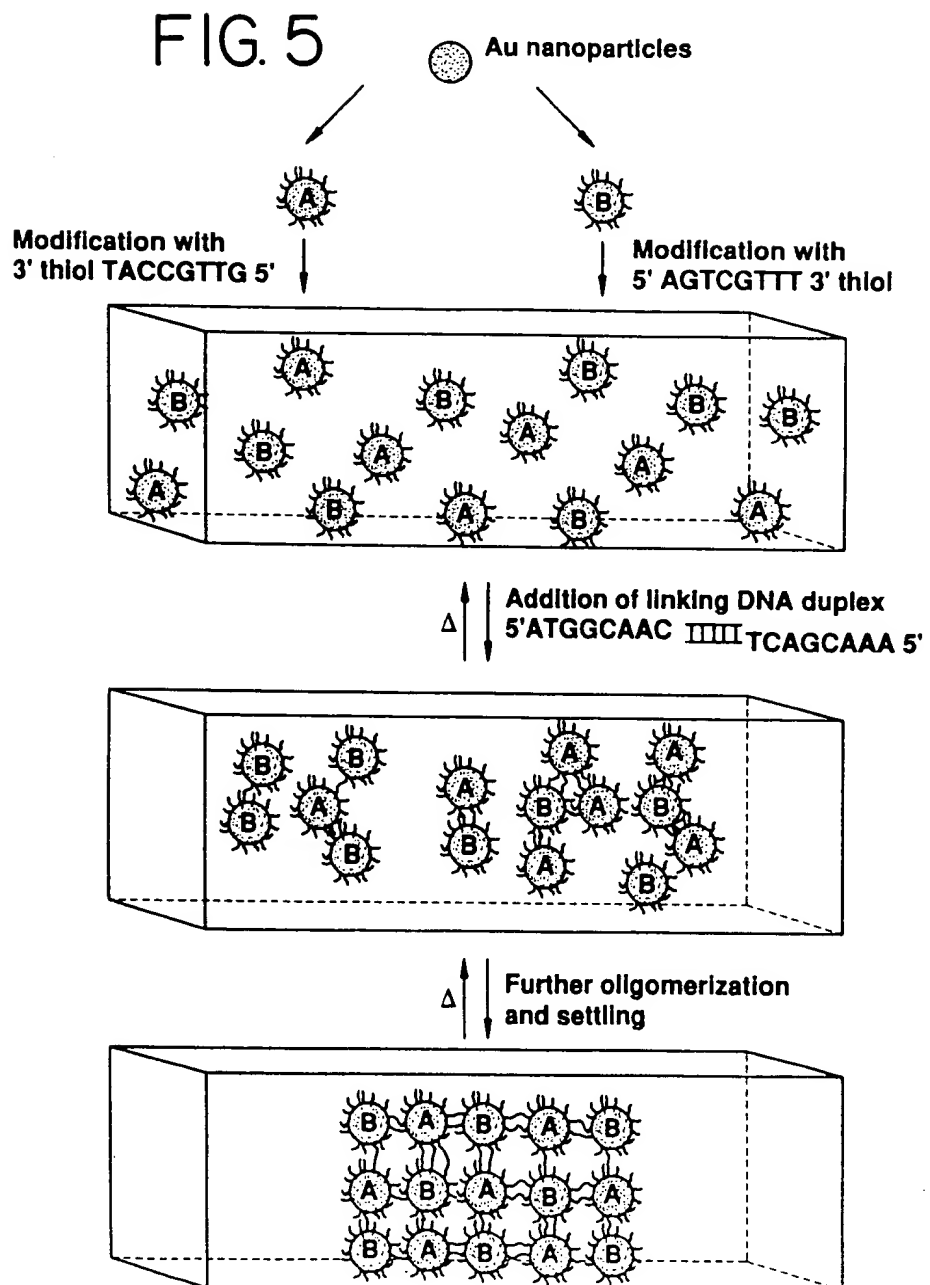
Aggregate



Heat
 Stand below T_m

Precipitate (formed by further cross-linking)

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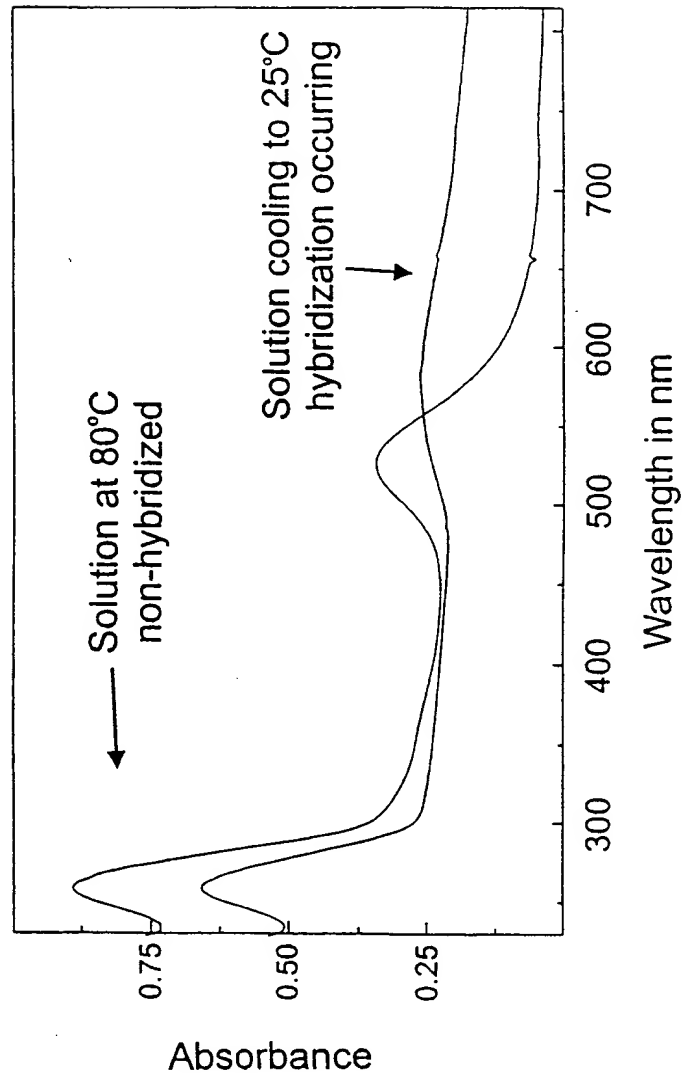
FIG. 6A FIG. 6B FIG. 6C



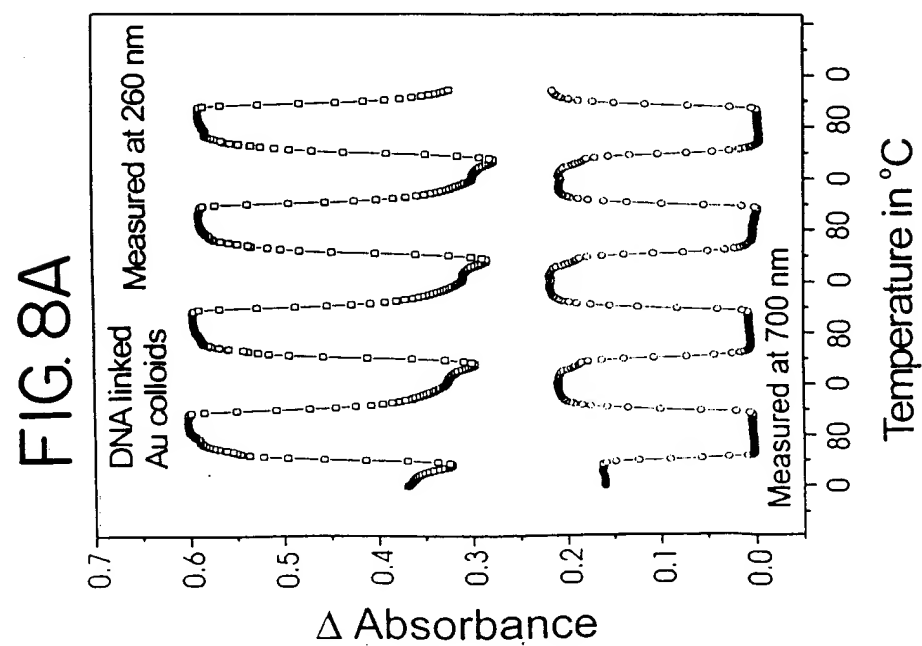
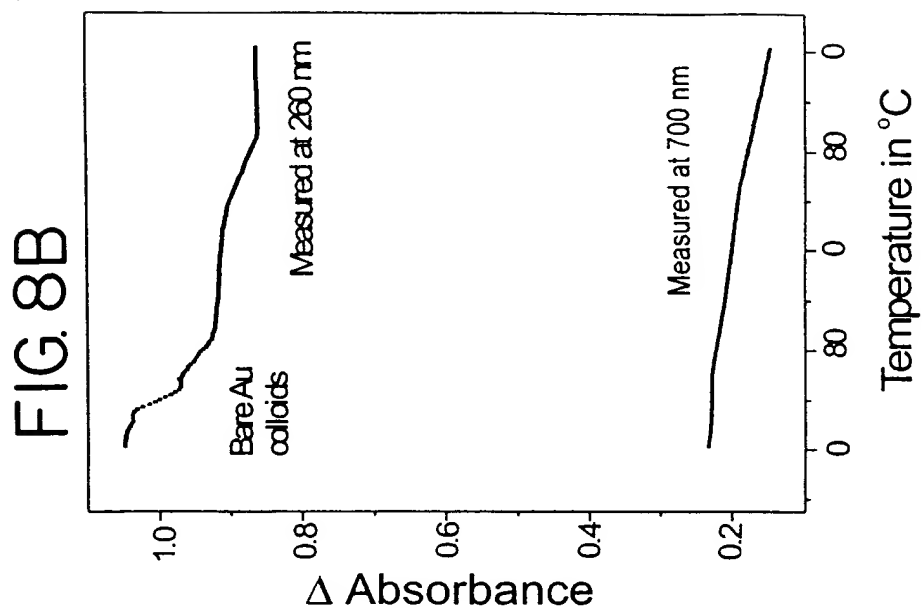
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FIG. 7



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FIG. 9A

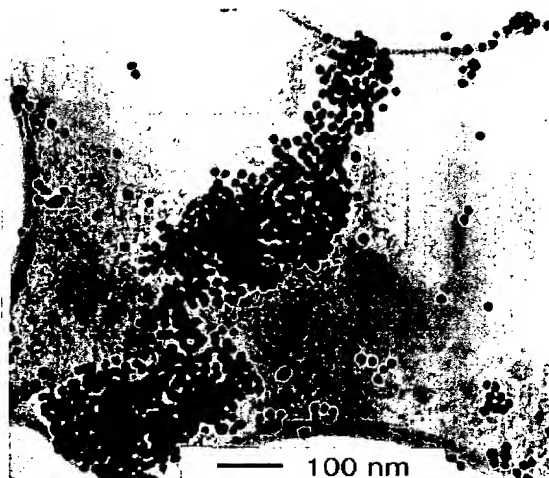
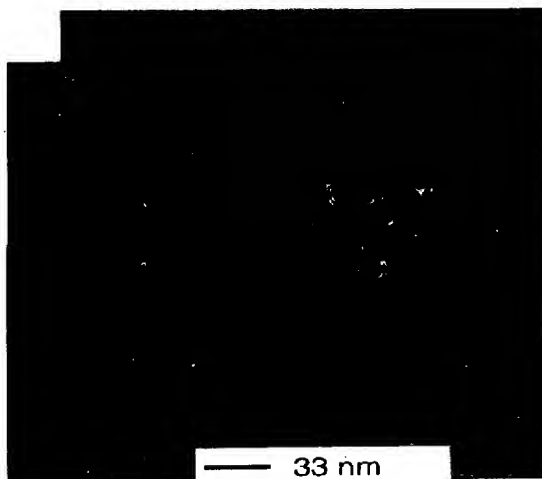
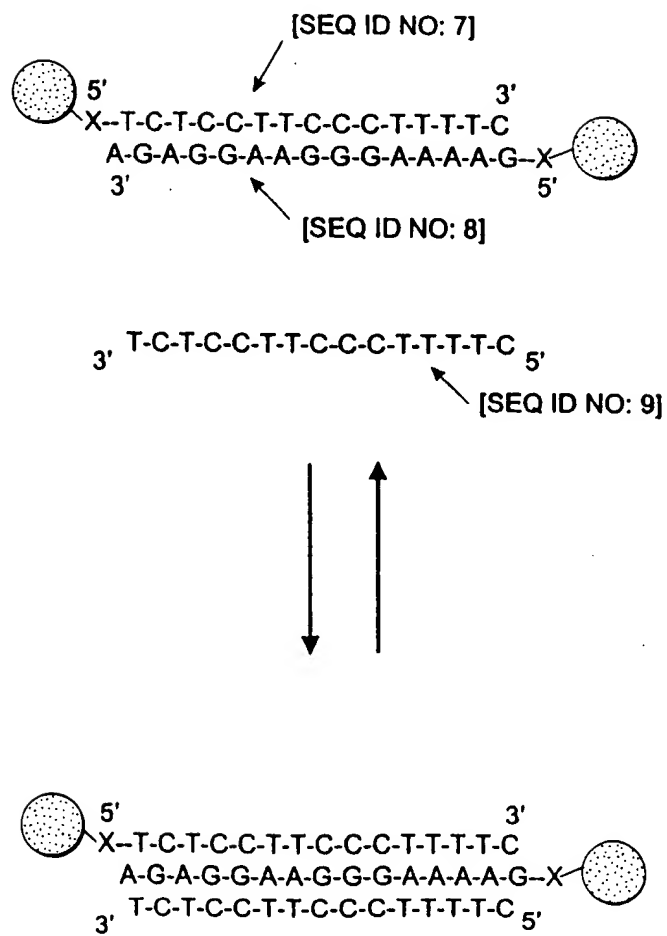


FIG. 9B



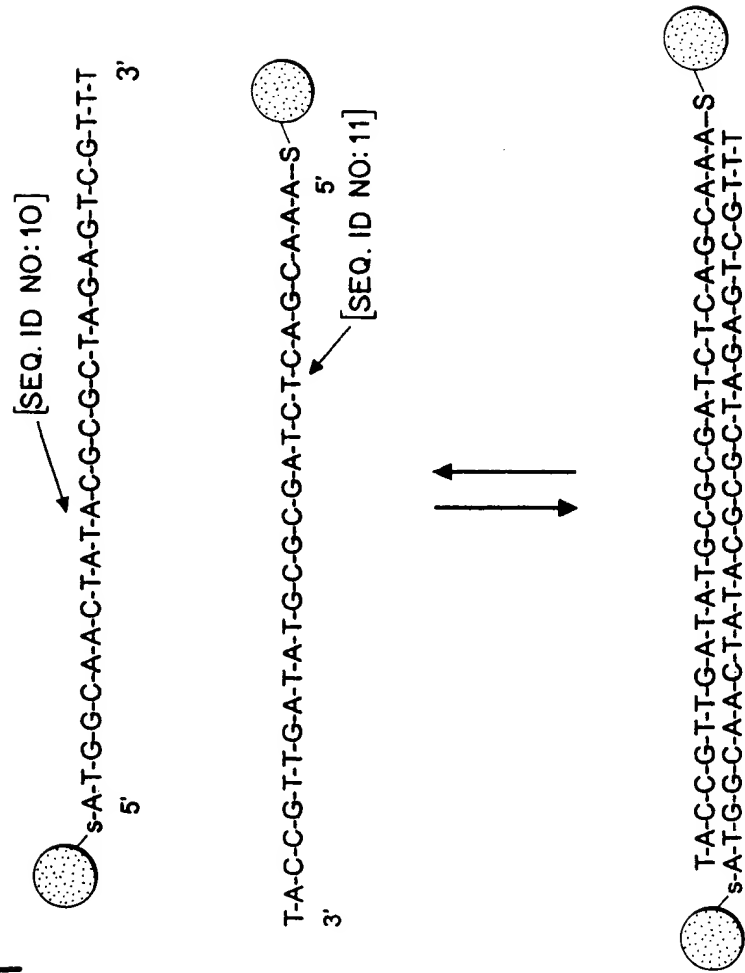
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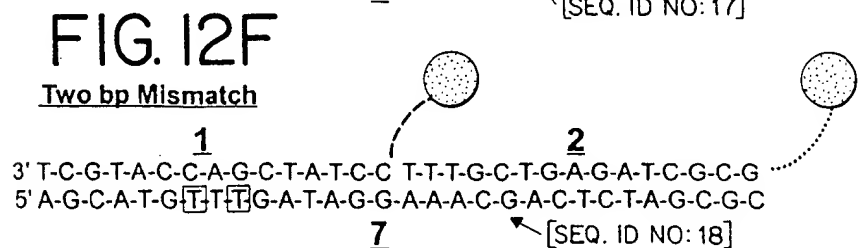
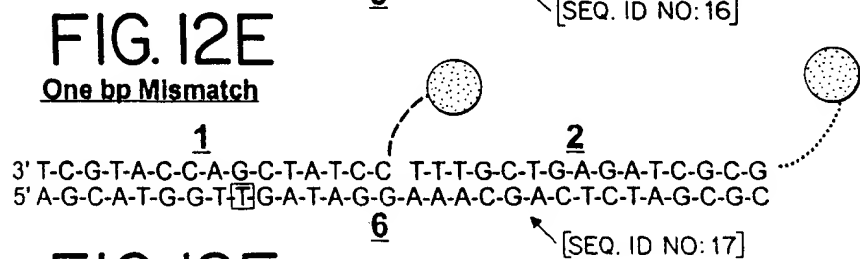
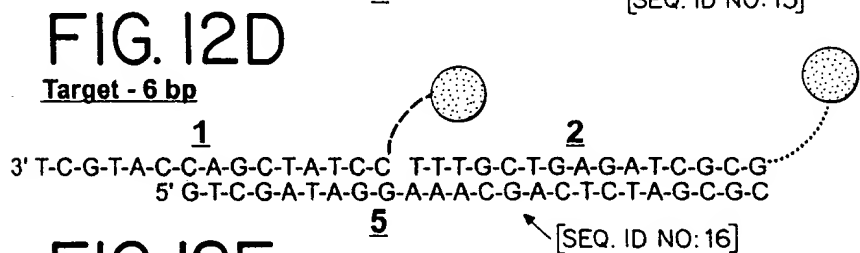
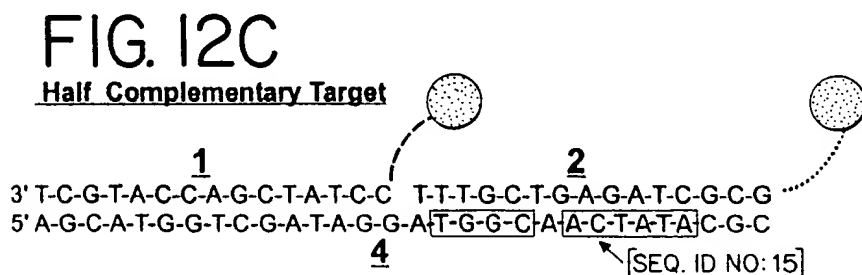
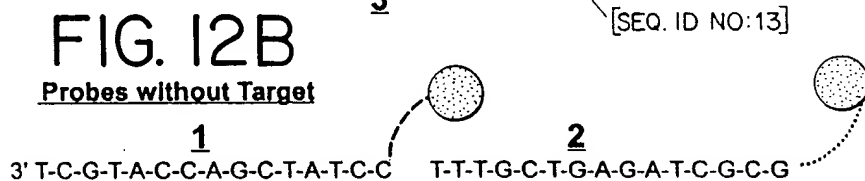
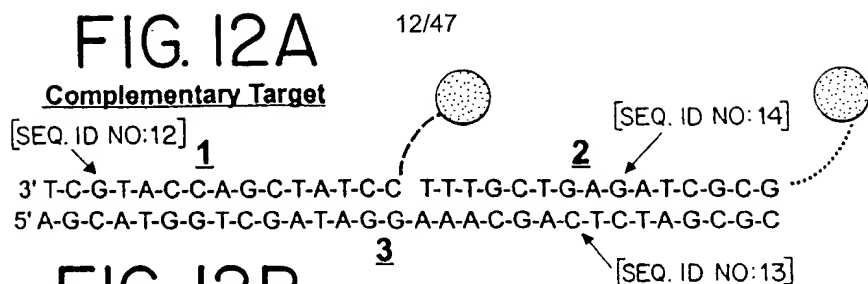
FIG. 10



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FIG. 11





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FIG. 13A

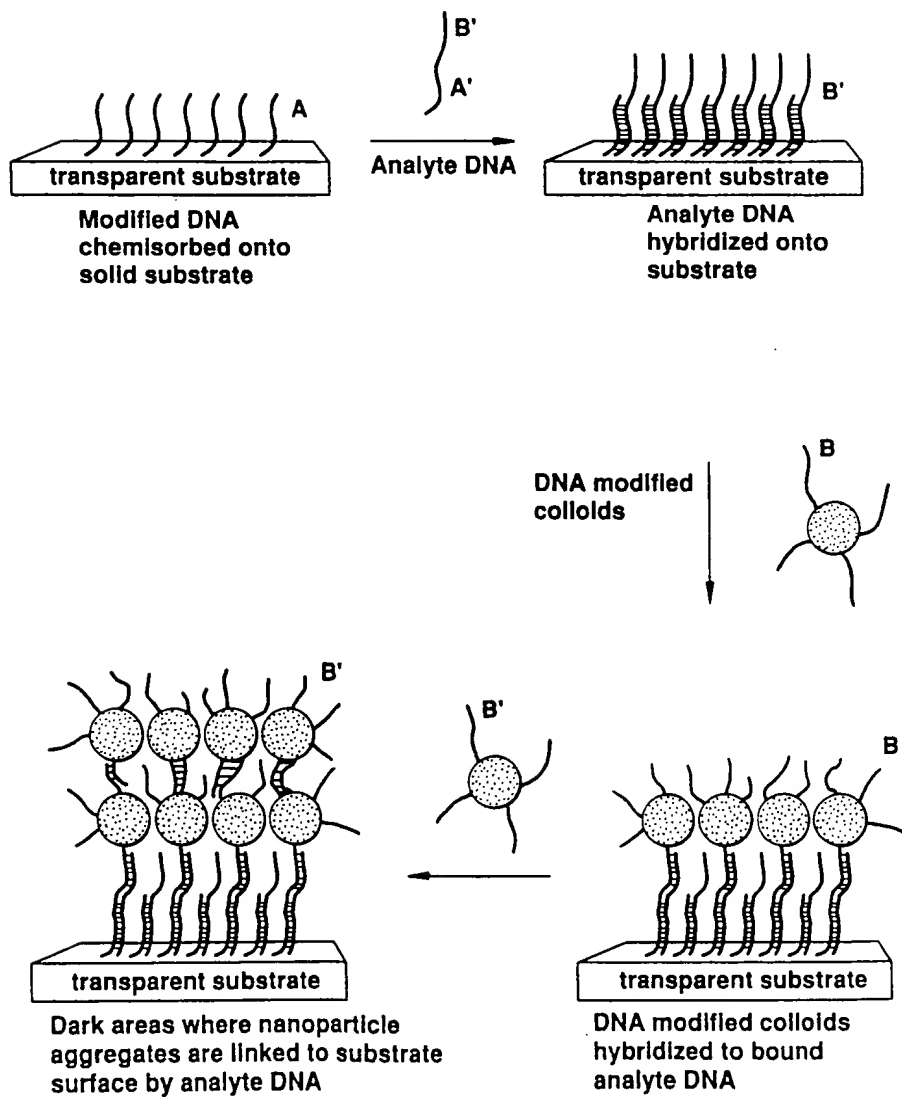


FIG. 13B

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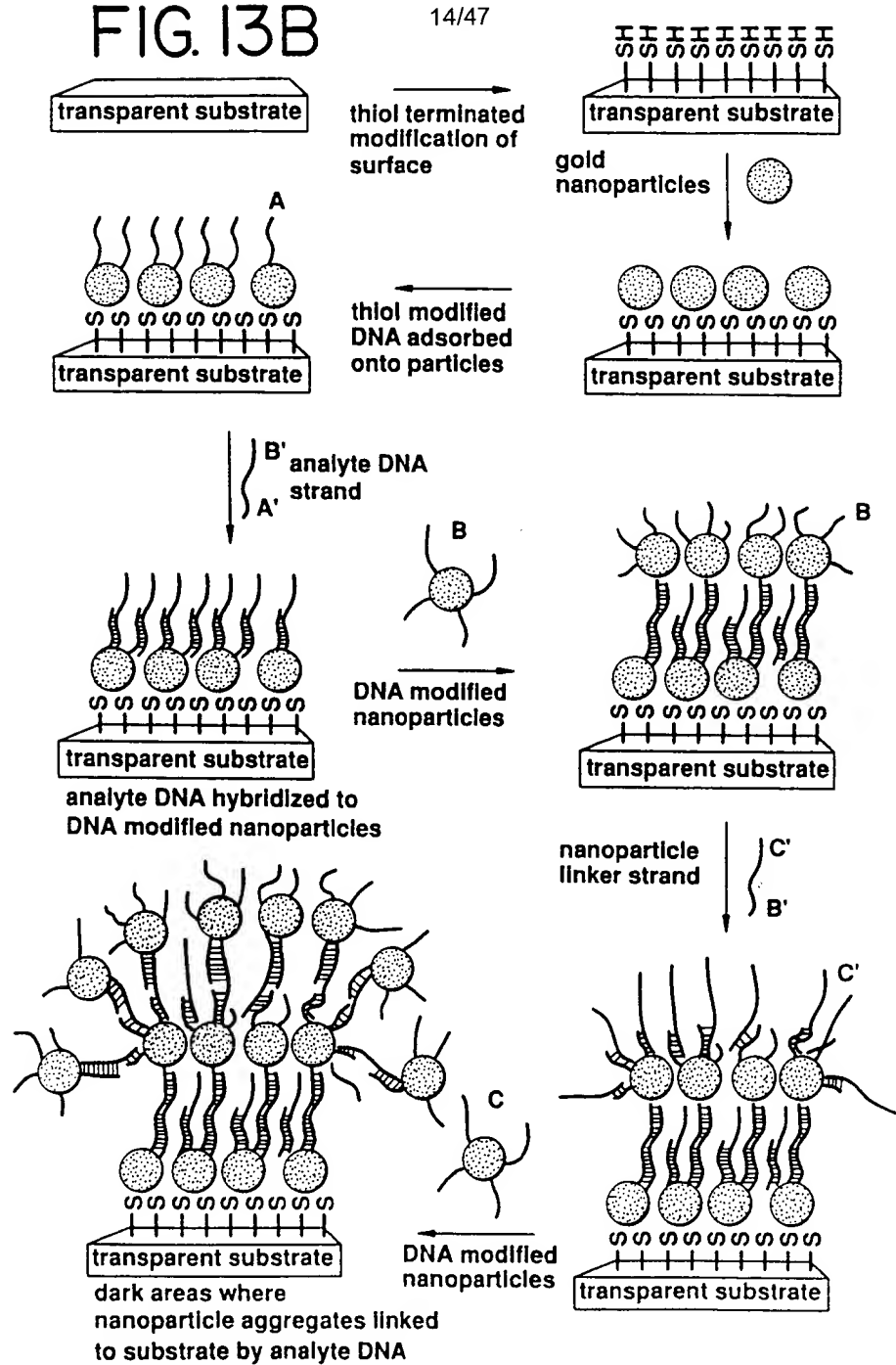


FIG. 14A 15/47

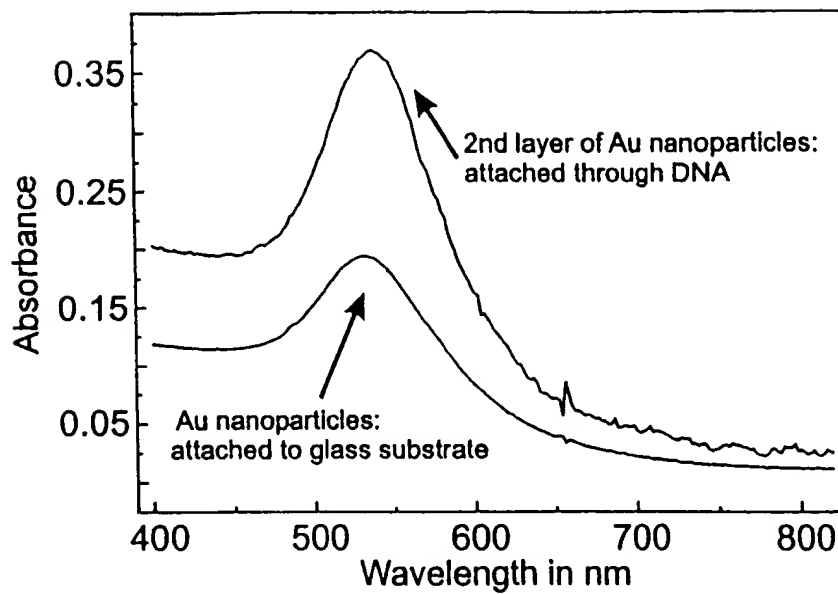


FIG. 14B

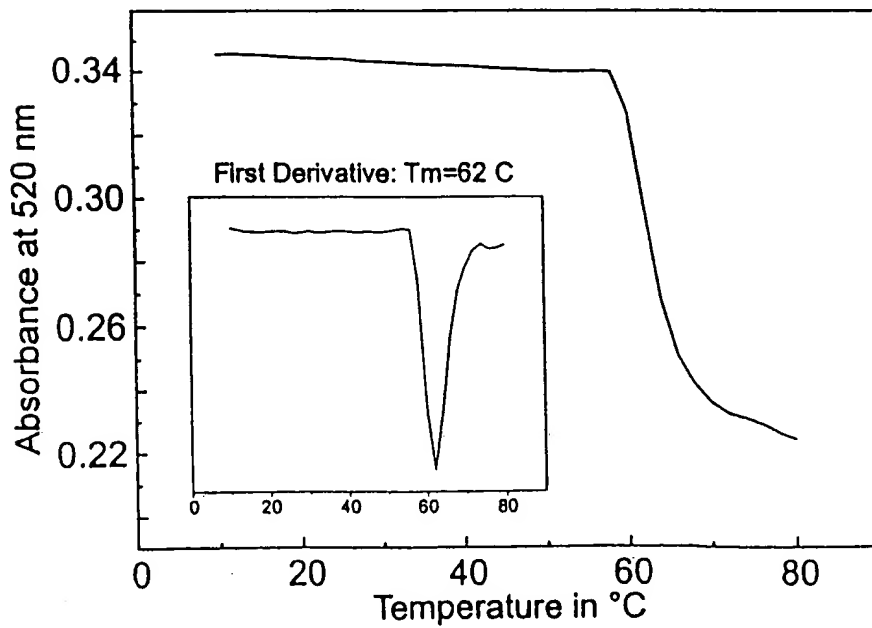


FIG. 15A

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Probes with No Target

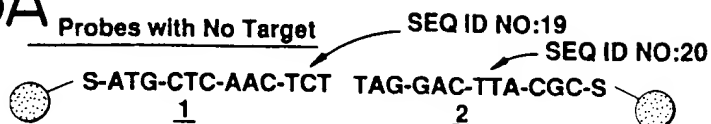


FIG. 15B

Half-Complementary Target

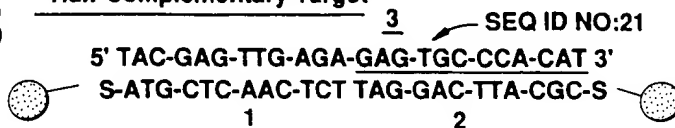


FIG. 15C

Complementary Target

T_m=53.5°C

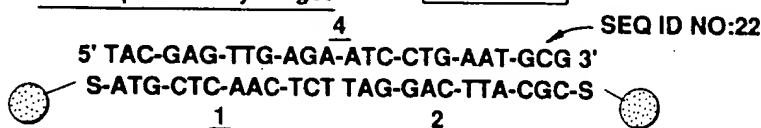


FIG. 15D

ONE Base-Pair Mismatch at Probe Head

T_m=50.4°C

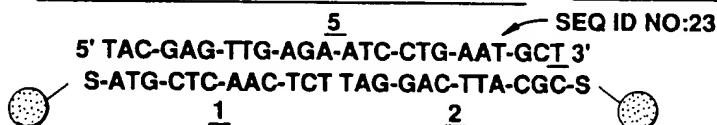


FIG. 15E

ONE Base-Pair Mismatch at Probe Tail

T_m=46.2°C

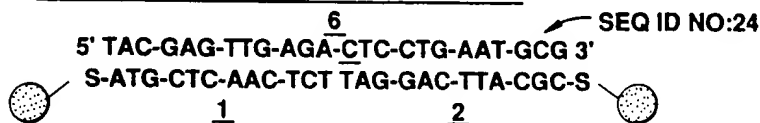


FIG. 15F

ONE Base Deletion

T_m=51.6°C

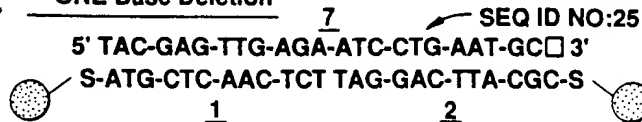
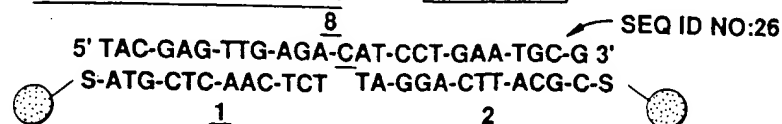


FIG. 15G

ONE Base-Pair Insertion

T_m=50.2°C



24 Base Template

FIG. 16A

5' TAC-GAG-TTG-AGA-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT TAG-GAC-TTA-CGC-S —
1 2

FIG. 16B

48 Base Template with Complementary 24 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT TAG-GAC-TTA-CGC-S —
1 2

FIG. 16C

72 Base Template with Complementary 48 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-TAT-ATT-GGA-CGC-TTT-ACG-GAC-AAC-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT-ATA-TAA-CCT-GCG-AAA-TGC-CTG-TTG TAG-GAC-TTA-CGC-S —
1 2

FIG. 17B

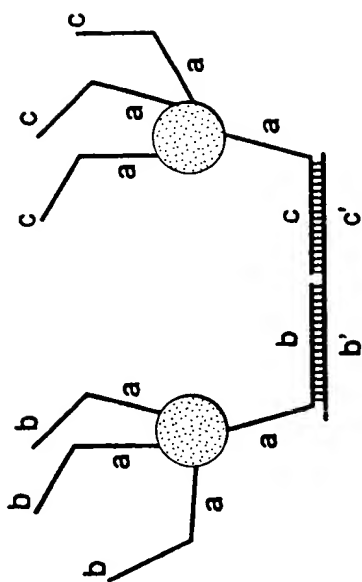


FIG. 17A

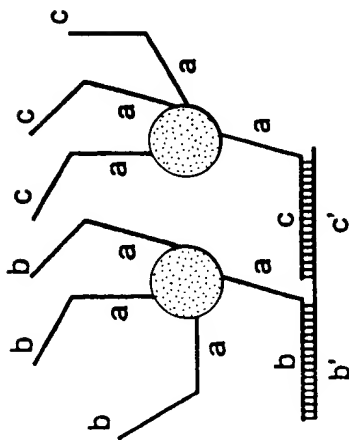


FIG. 17C

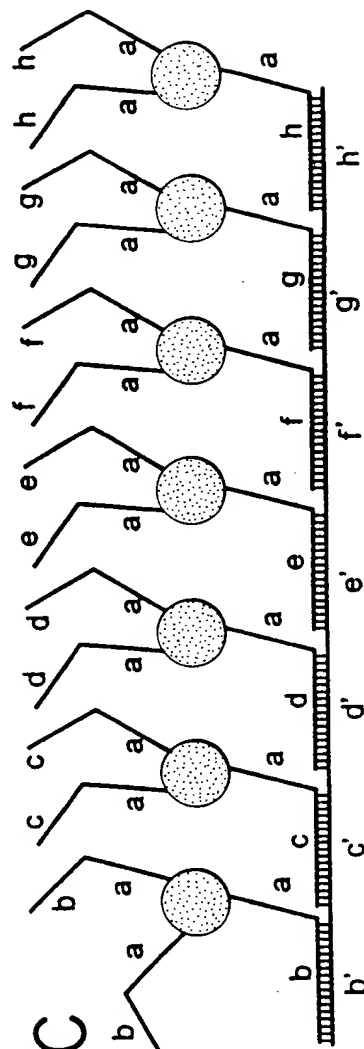


FIG. 17D

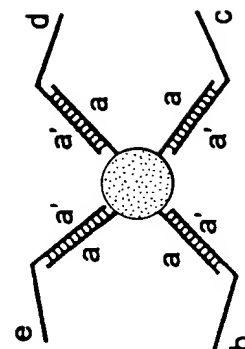
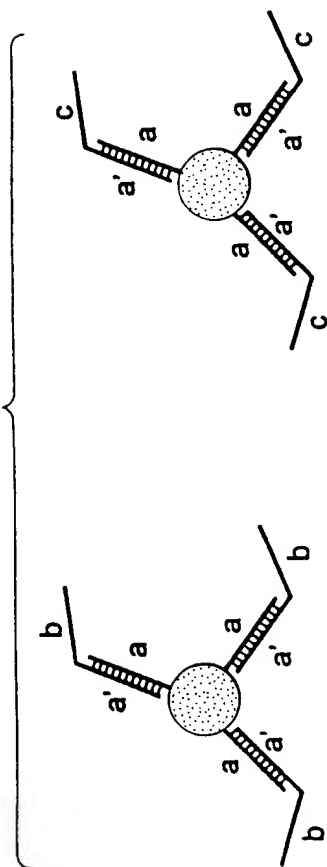


FIG. 17E

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FIG. 18

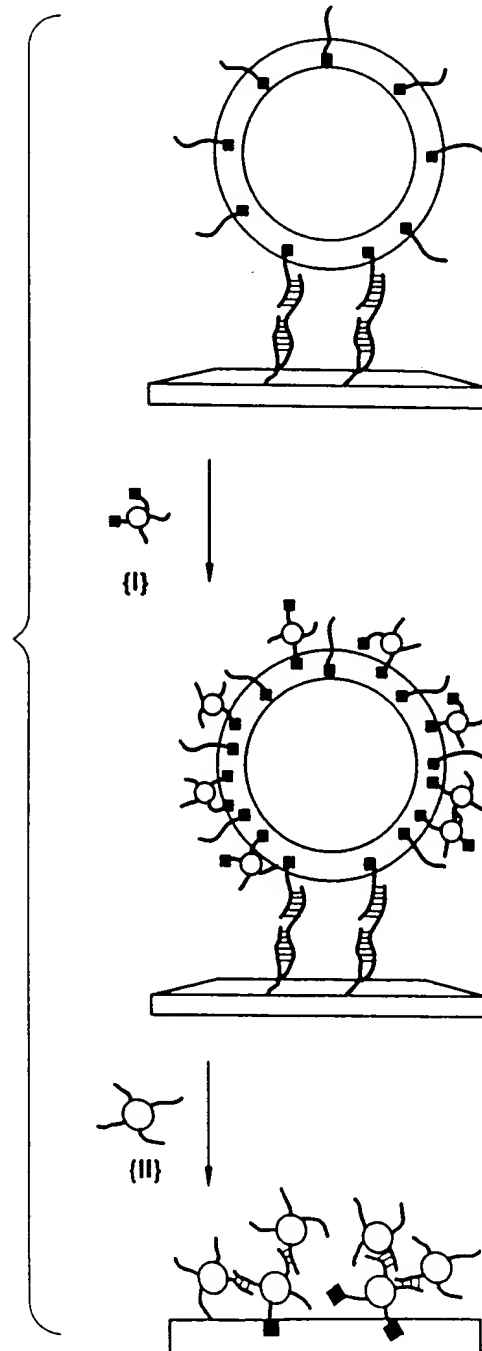


FIG. 19A

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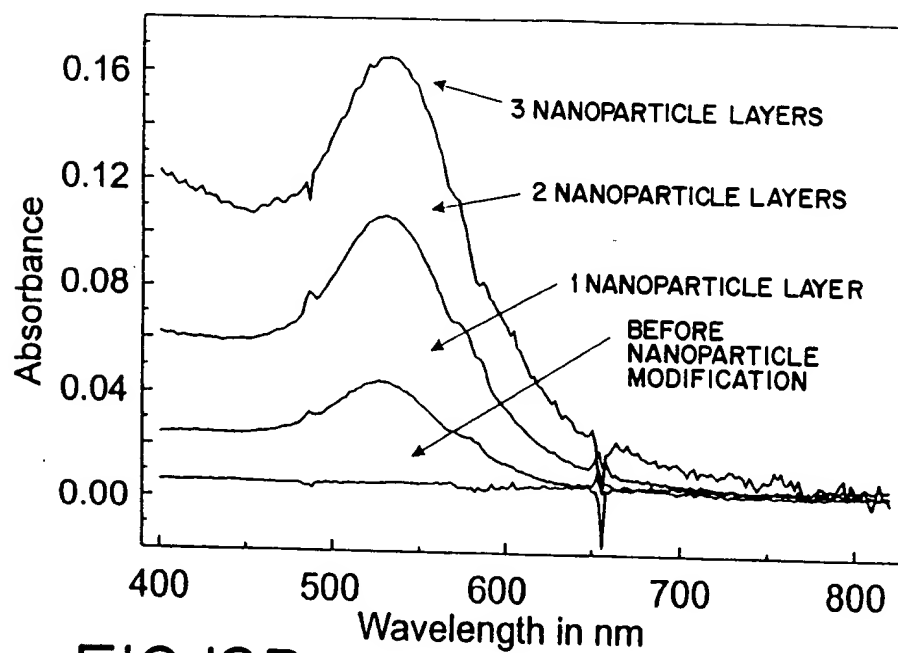
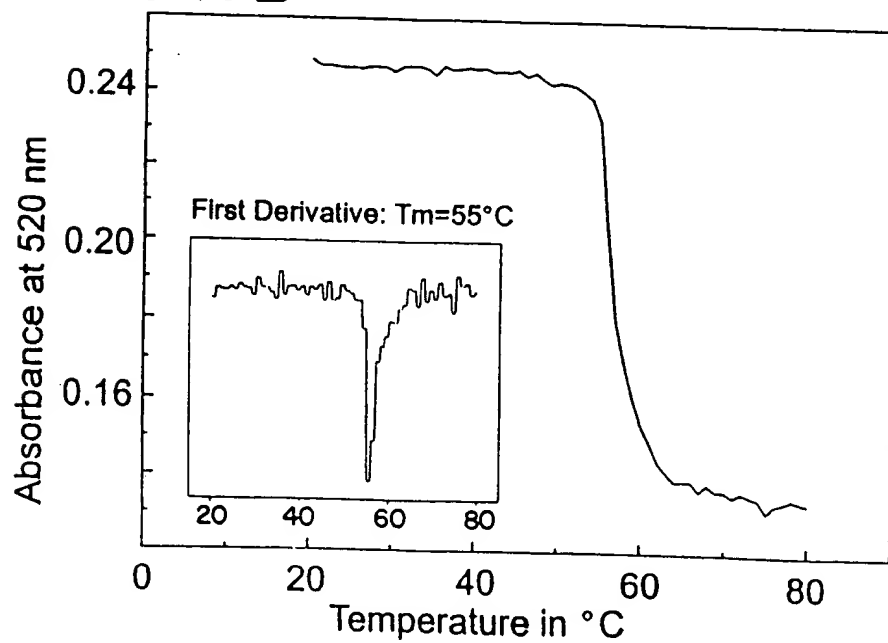


FIG. 19B



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FIG. 20A

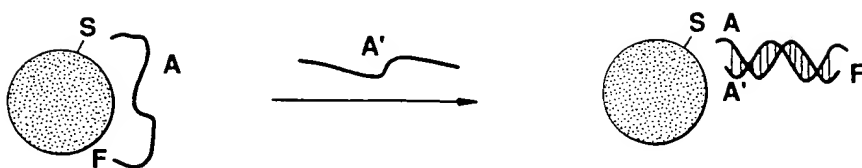


FIG. 20B

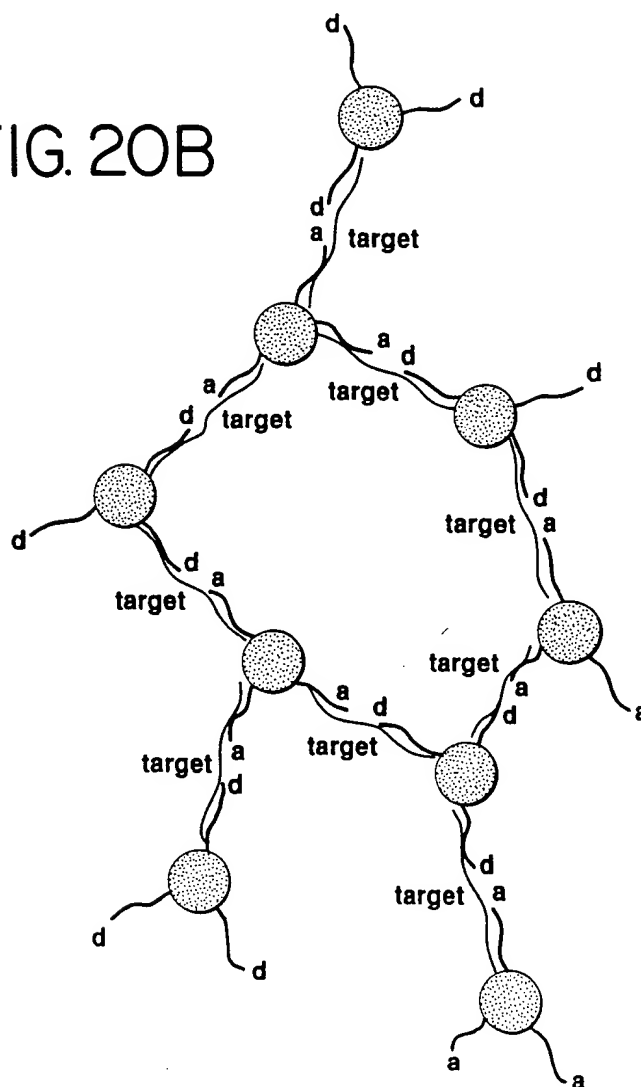
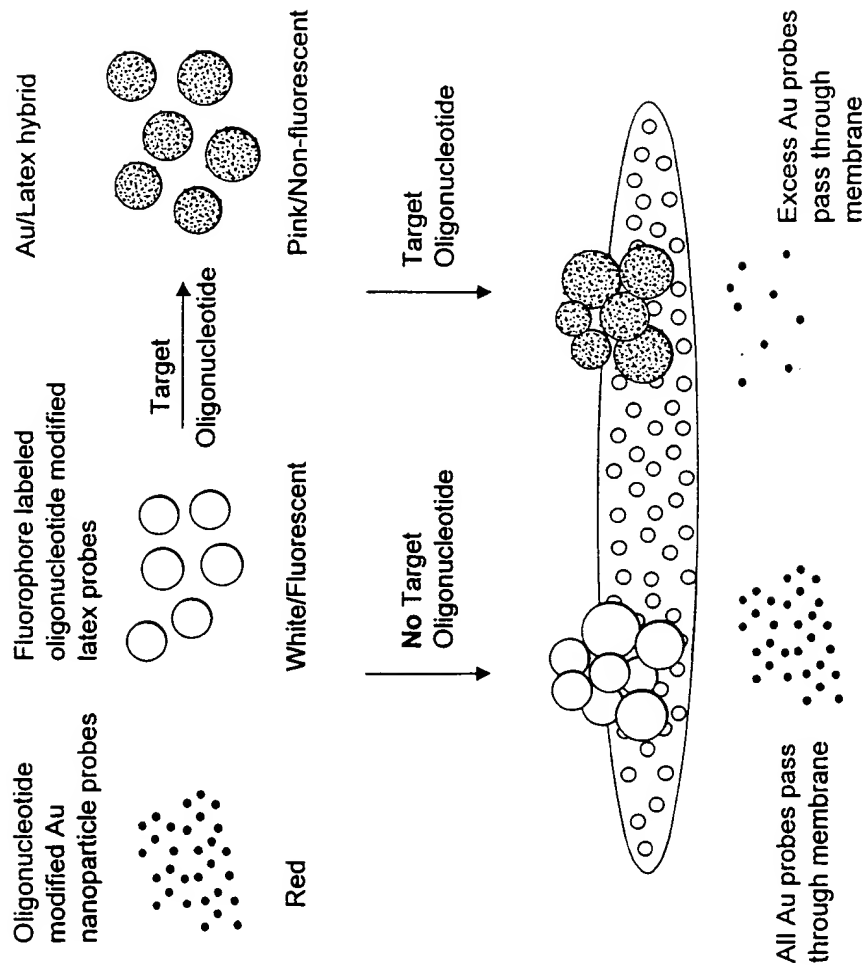
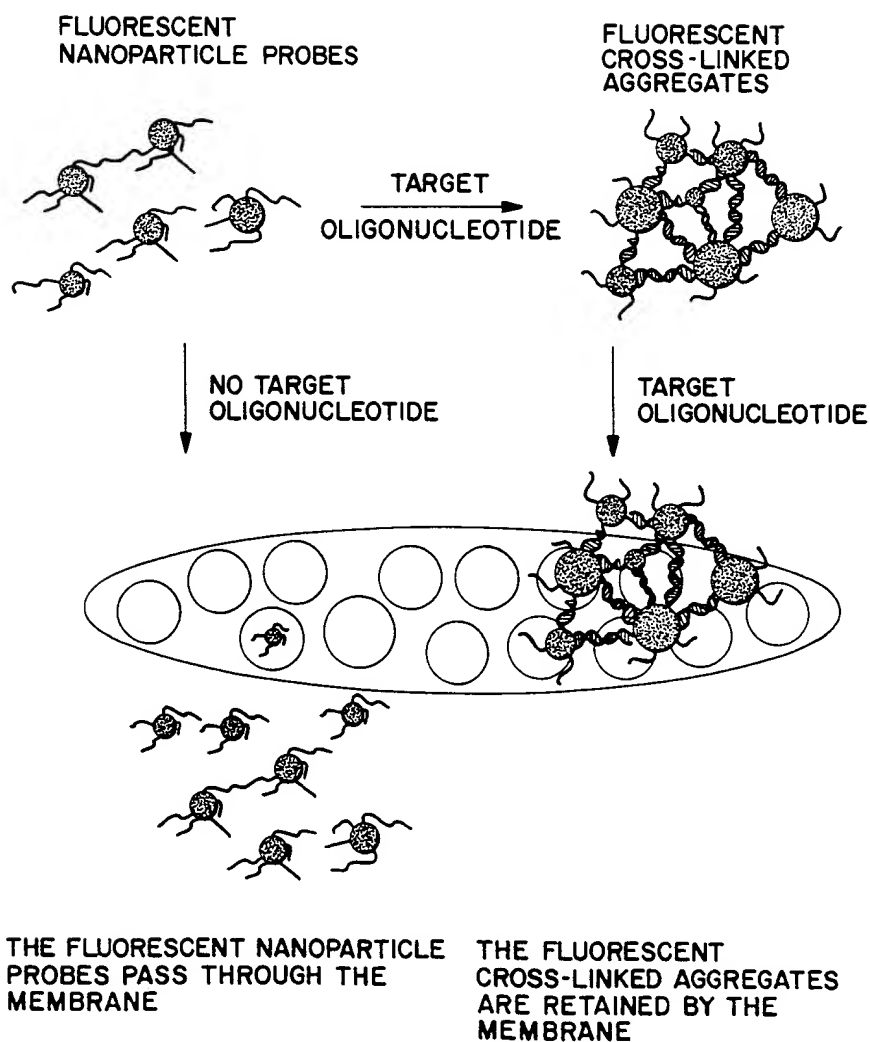


FIG. 2I



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FIG. 22



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FIG. 23

Anthrax PCR Product

5'G GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA GTA ATT AAT
3'C CGC CTA CTC AGT CAT CAA TTC CTC CGA GTA TCT CTT CAT TAA TTA

TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT ATA AGA AAA
AGC AGT TGT CTC CCT AAT AAC AAT TTA TAA CTA TTC CTA TAT TCT TTT

ATA TTA TCC AGG GTT ATA TTG TAG AAA TTG AAG ATA CTG AAG GGC TT 3'
TAT AAT AGG TCC CAA TAT AAC ATC TTT AAC TTC TAT GAC TTC CCG AA 5'

141 mer Anthrax PCR product [SEQ ID NO:36]



[SEQ ID NO:37]



[SEQ ID NO:38]

Oligonucleotide-Nanoparticle Probes

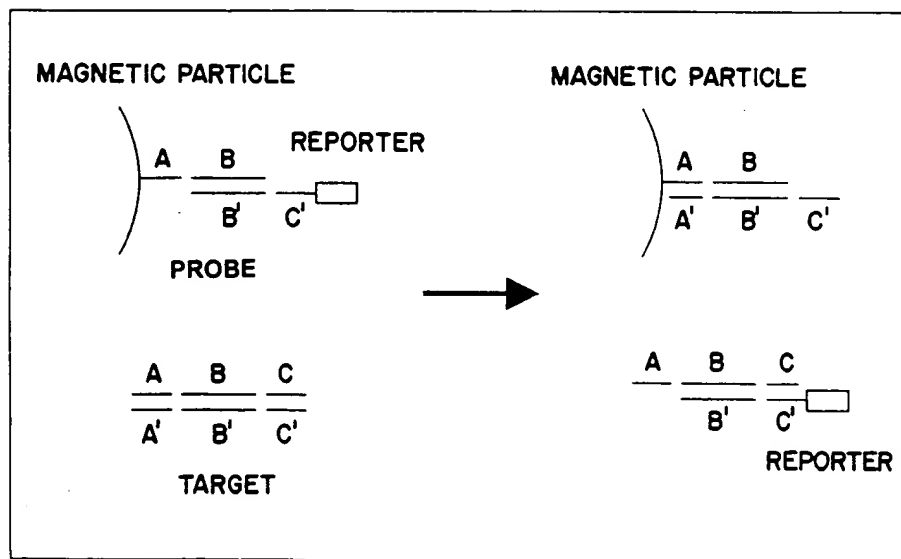
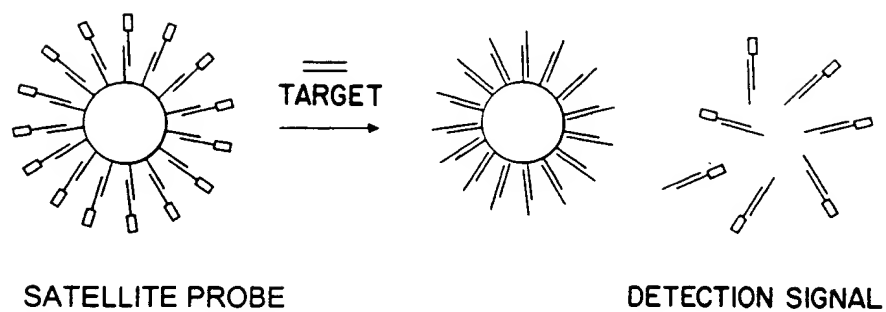
Blocker Oligonucleotides

3' C CGC CTA CTC AGT CAT CAA TTC CTC CGA GT
3' A TCT CTT CAT TAA TTA AGC AGT TGT
3' TAT TCT TTT TAT AAT AGG TCC CAA TAT
3' AAC ATC TTT AAC TTC TAT GAC TTC CCG AA

[SEQ ID NO:39]
[SEQ ID NO:40]
[SEQ ID NO:41]
[SEQ ID NO:42]

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FIG. 24



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FIG. 25A

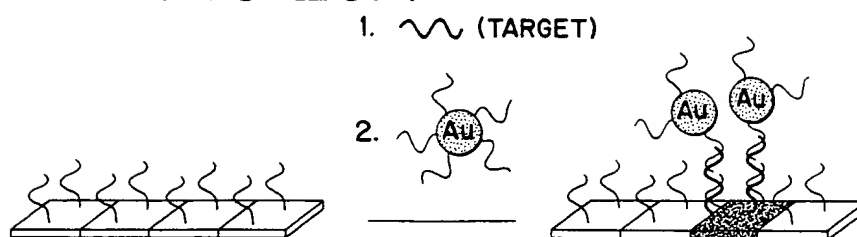
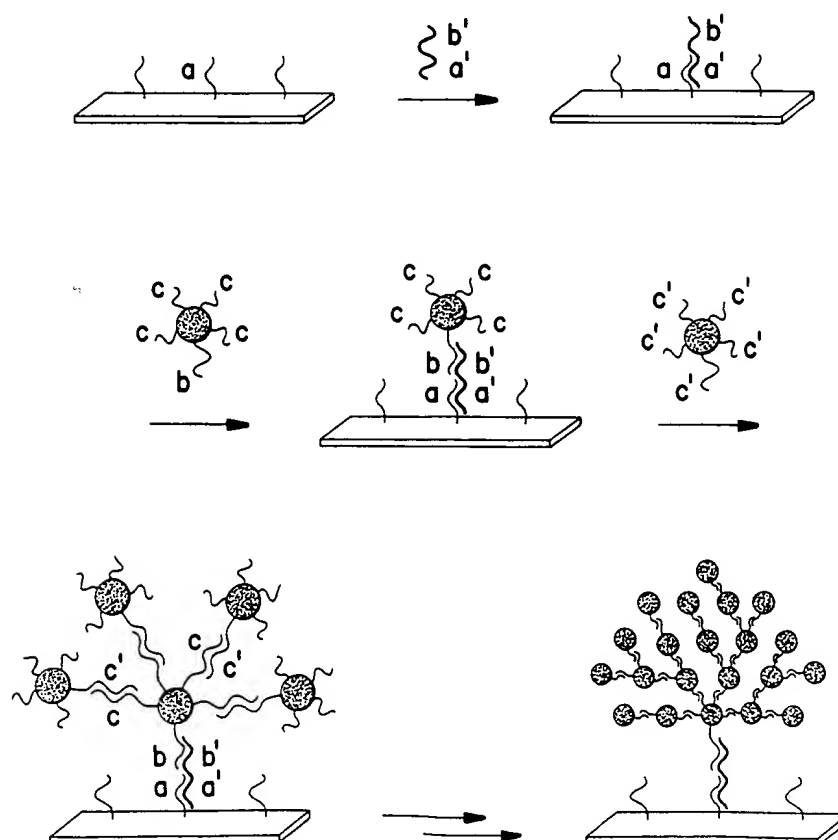


FIG. 25B



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FIG. 26A

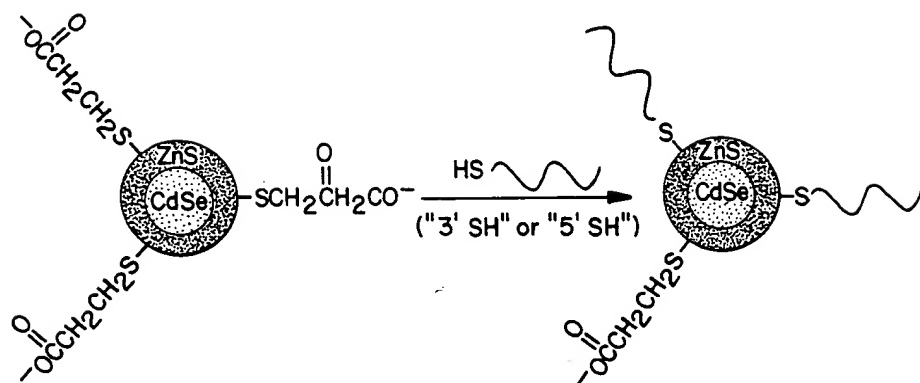
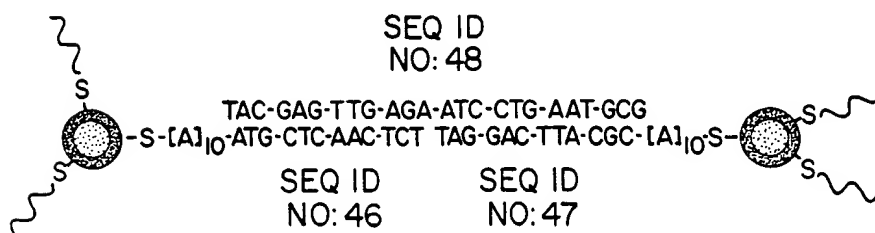


FIG. 26B



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FIG. 27A

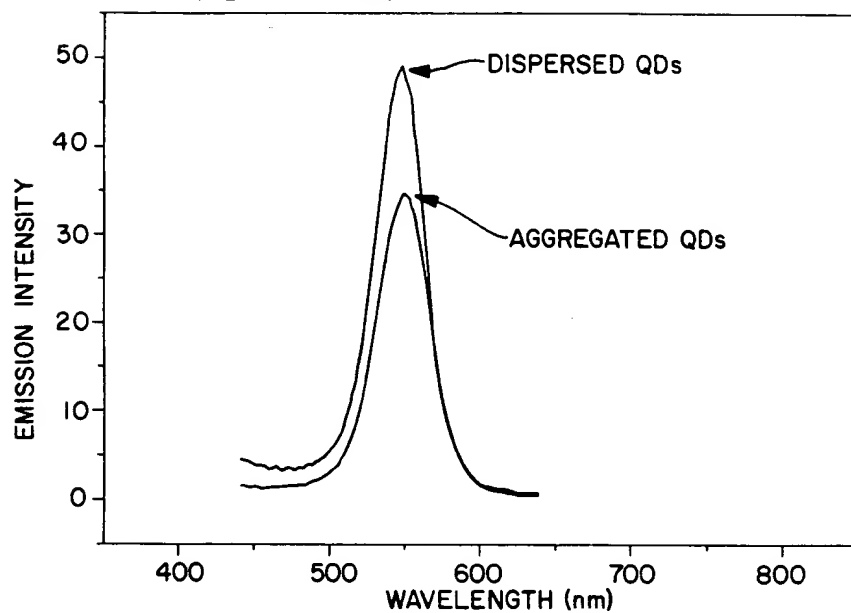
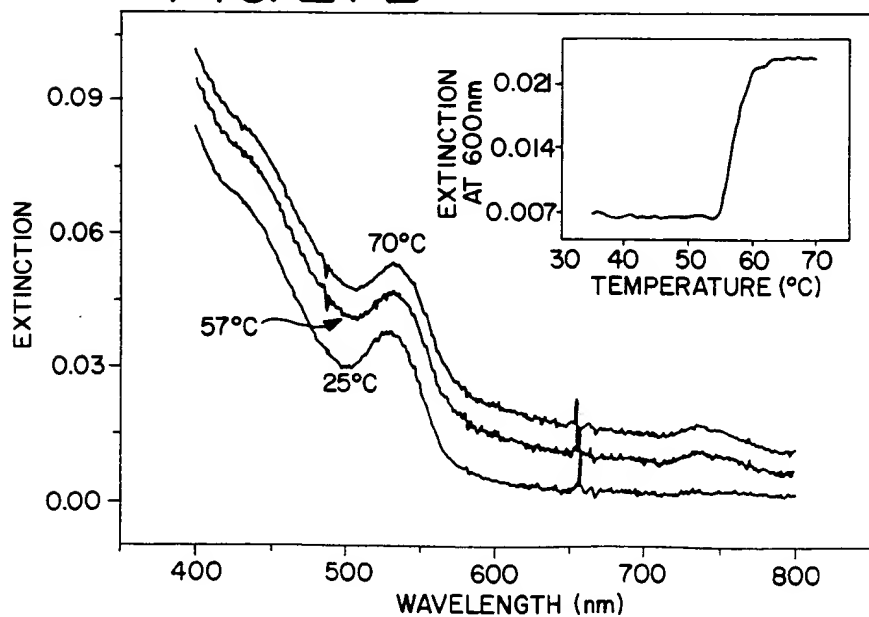


FIG. 27B



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FIG. 27C

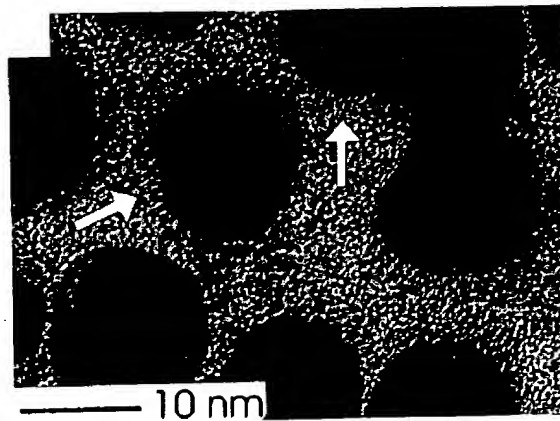
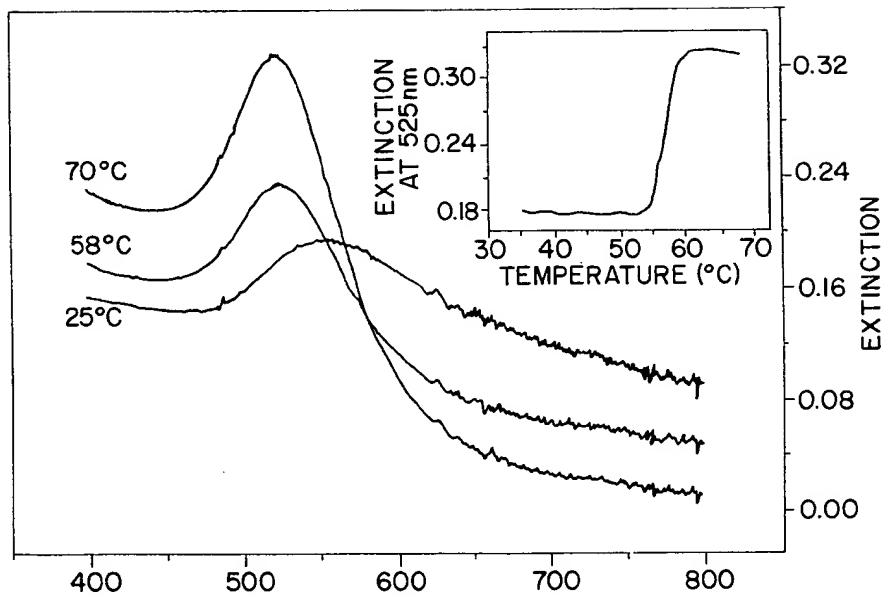


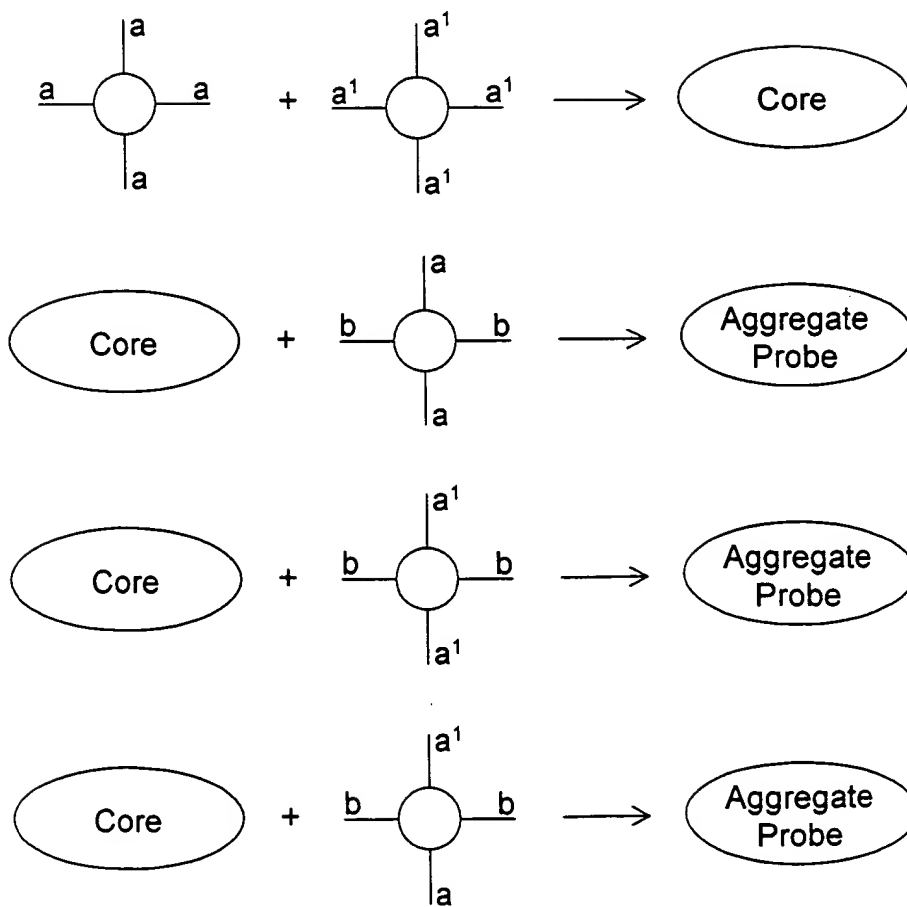
FIG. 27D



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FIG. 28A



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FIG. 28B

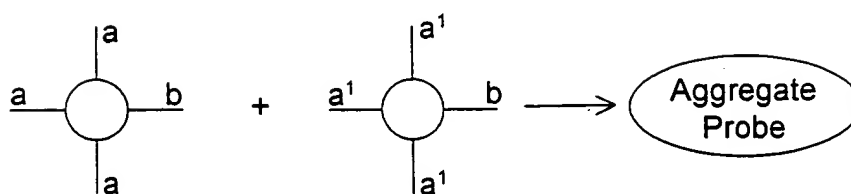
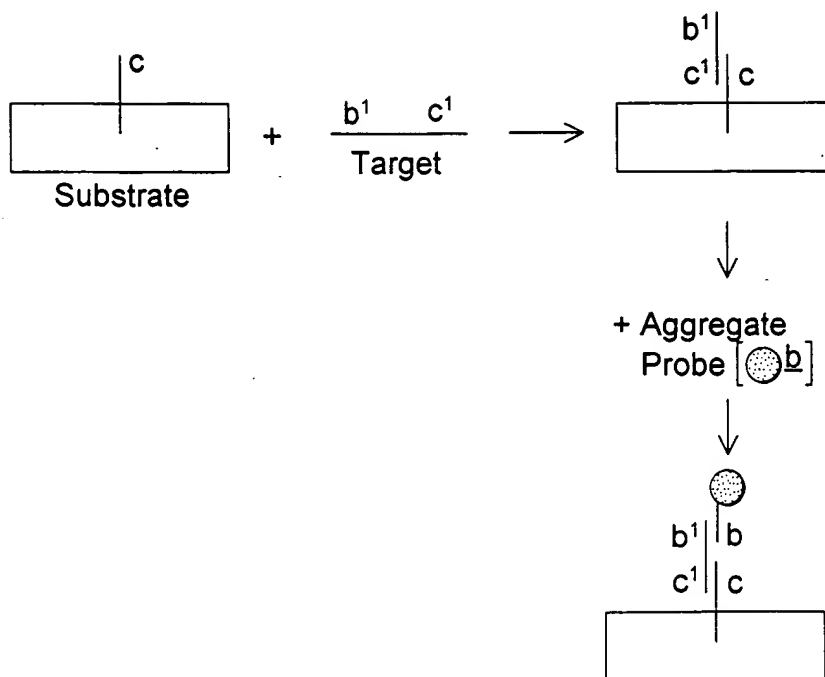
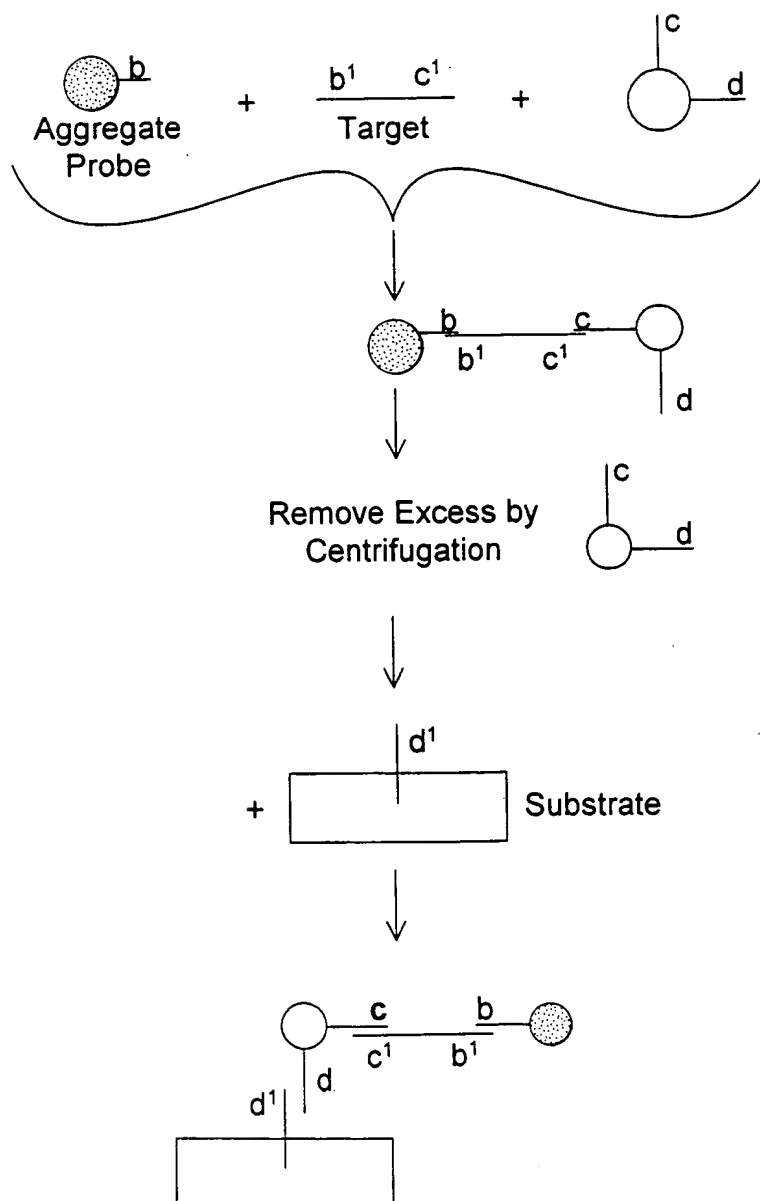


FIG. 28C



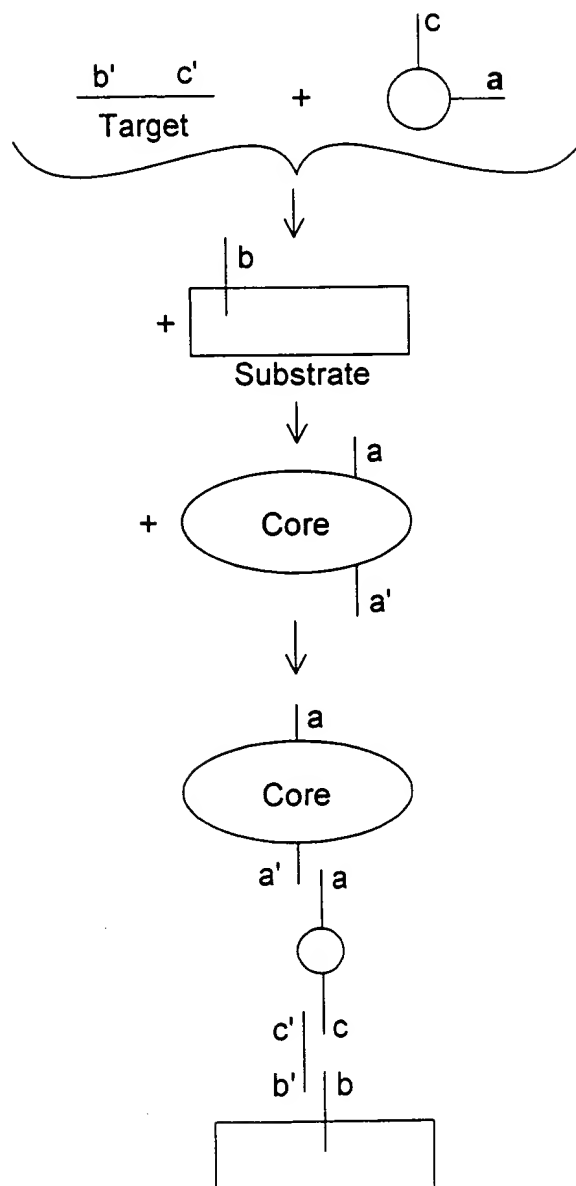
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FIG. 28D

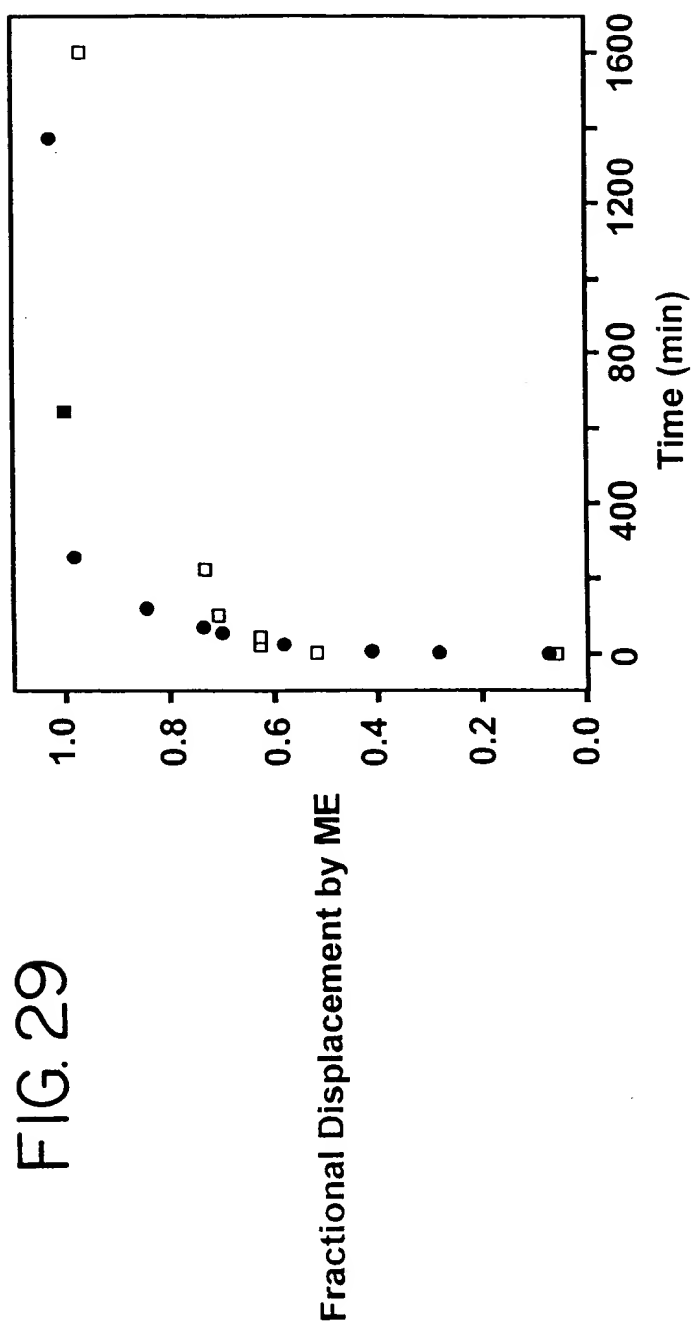


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FIG. 28E



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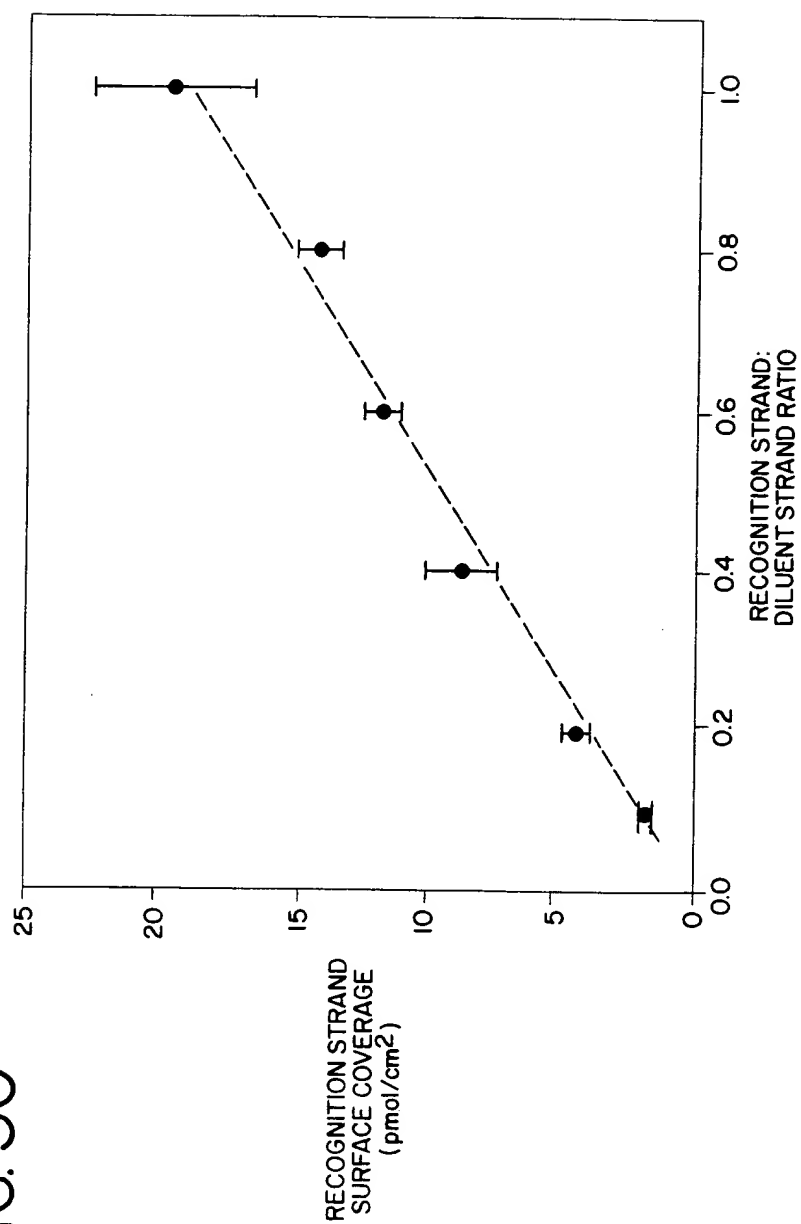
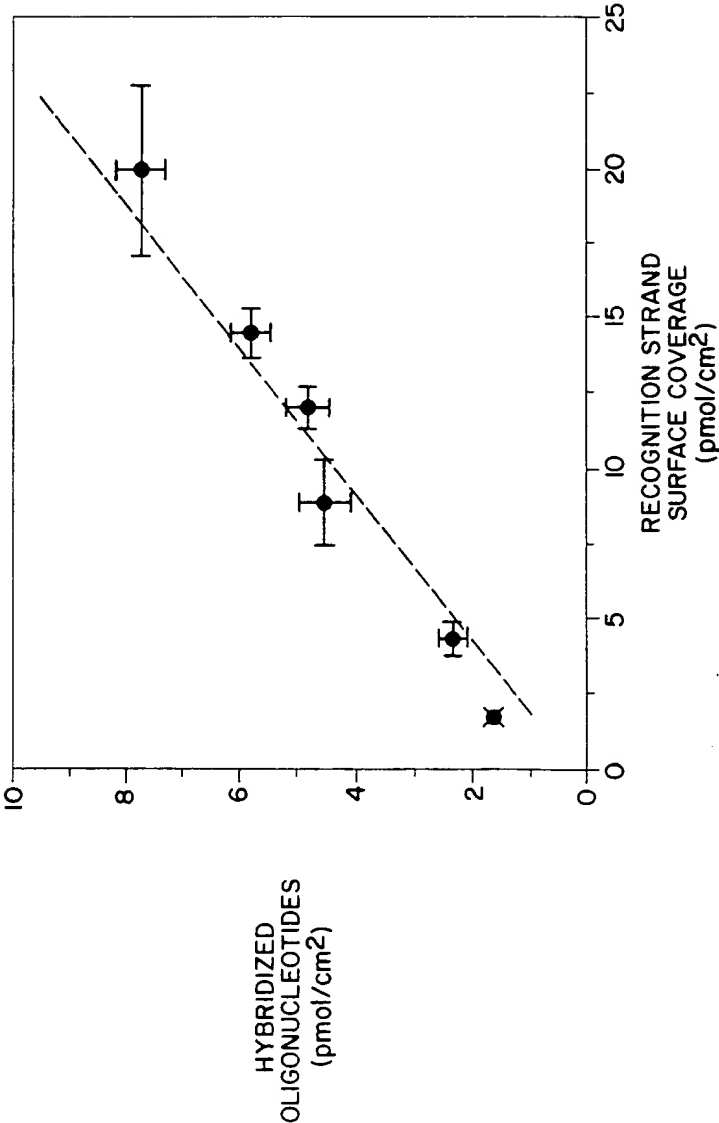


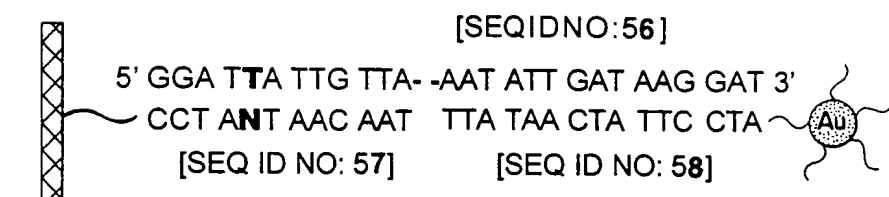
FIG. 30

FIG. 31

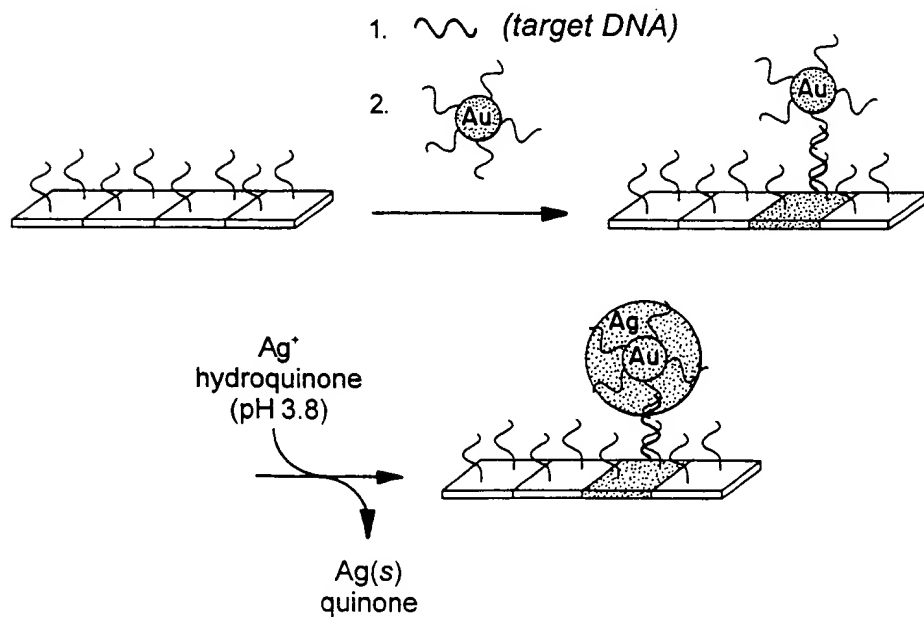


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FIG. 32

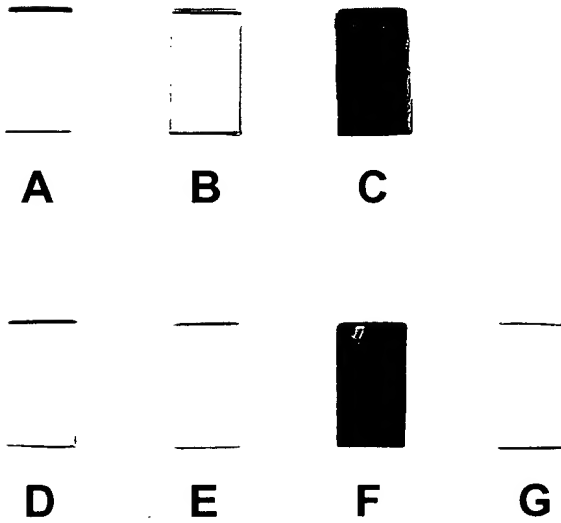


N = A (complementary),
 G,C,T (mismatched)



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FIG. 33



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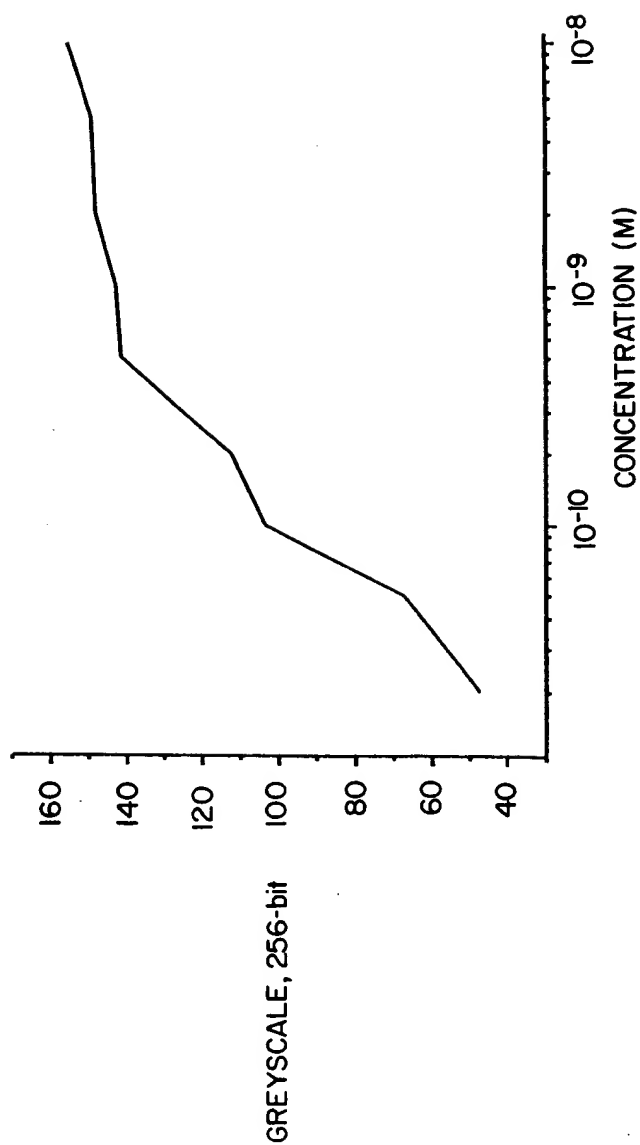


FIG. 34

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FIG. 35A

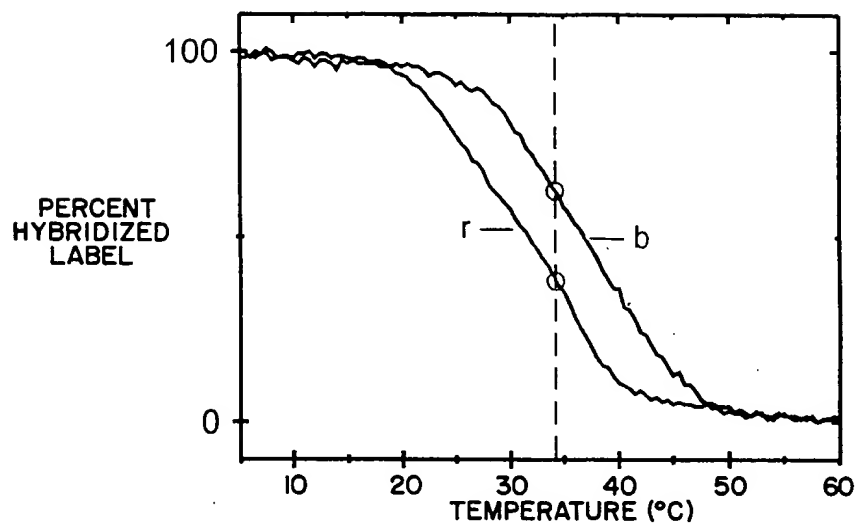
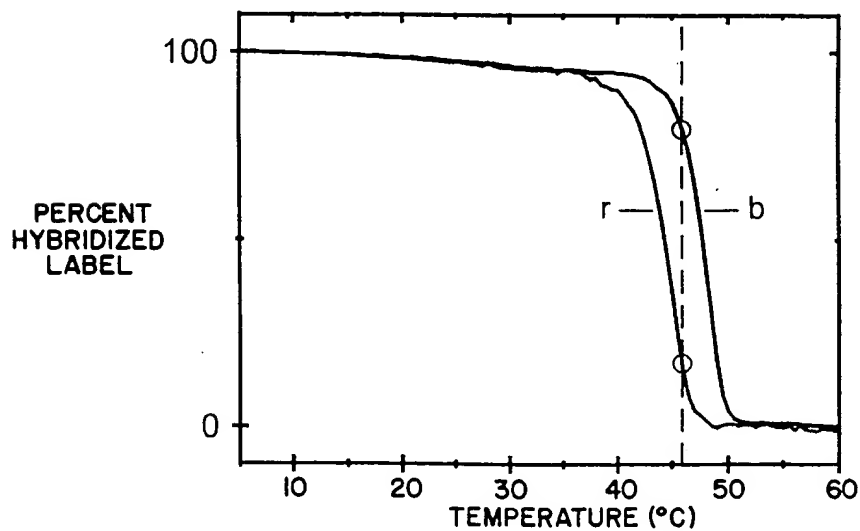


FIG. 35B



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FIG. 36A

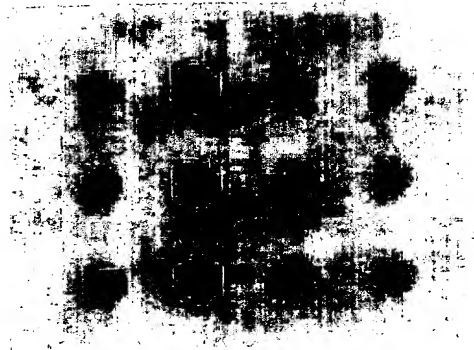
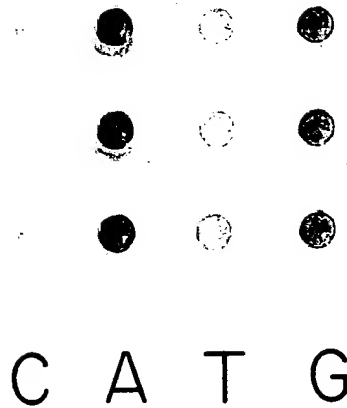


FIG. 36B



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FIG.37A

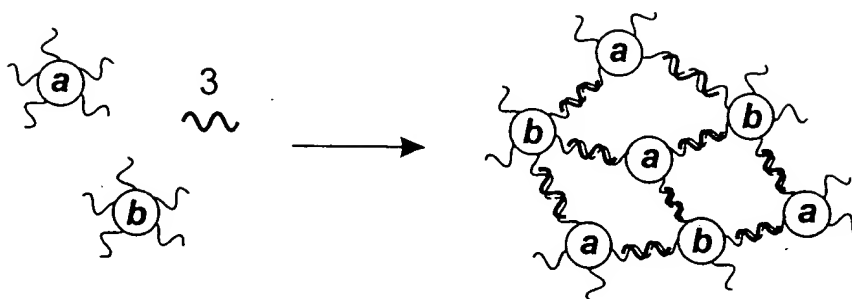


FIG.37B

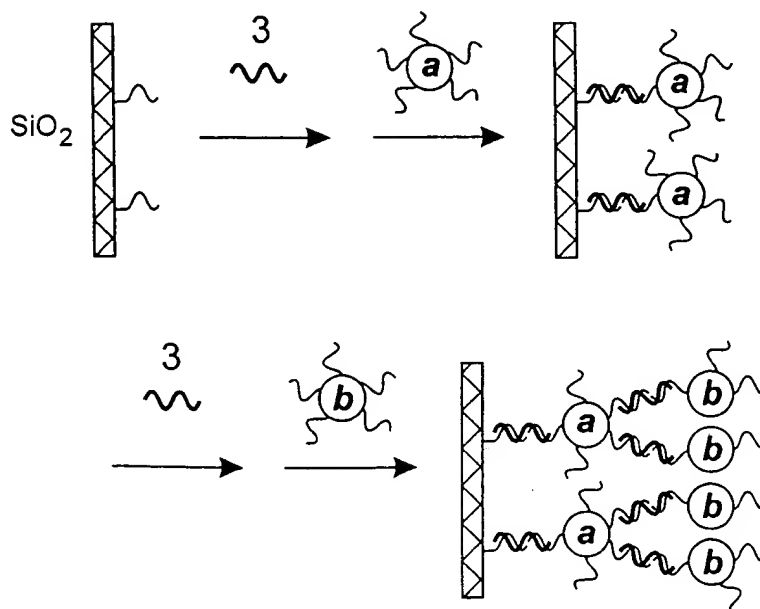


FIG. 38A

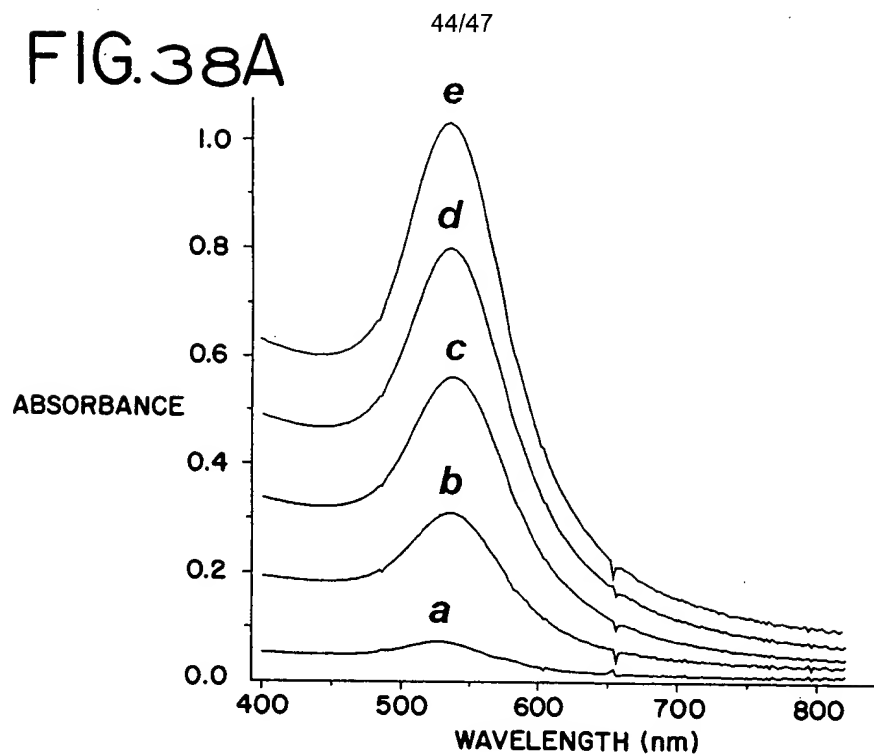
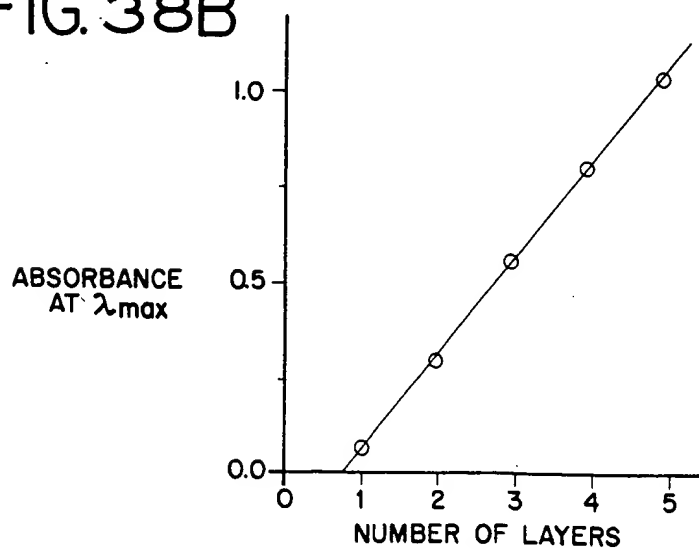


FIG. 38B

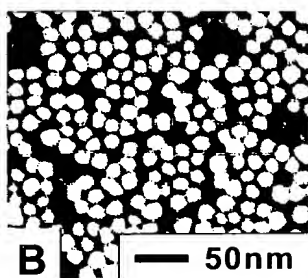


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FIG.39A



FIG.39B



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FIG.39C

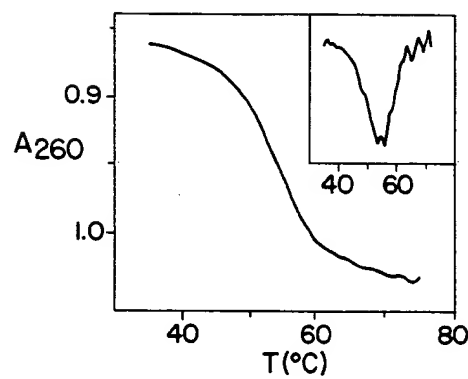


FIG.39D

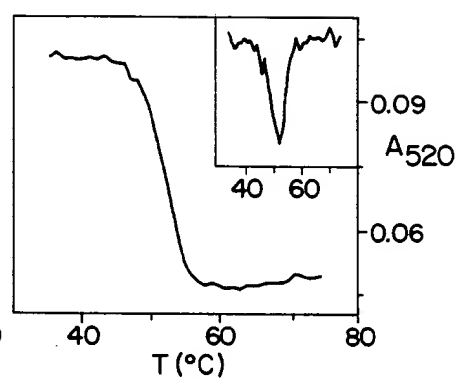


FIG.39E

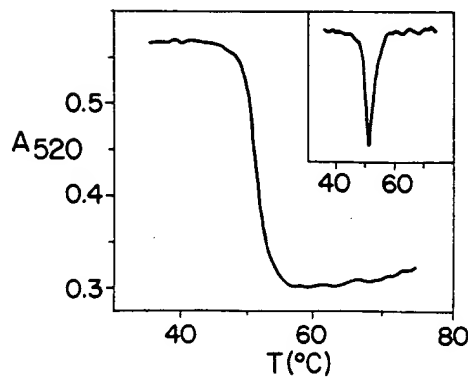
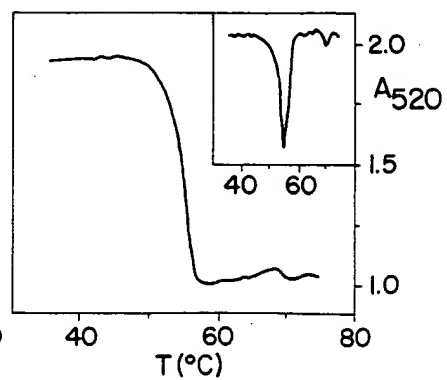


FIG.39F



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FIG. 40

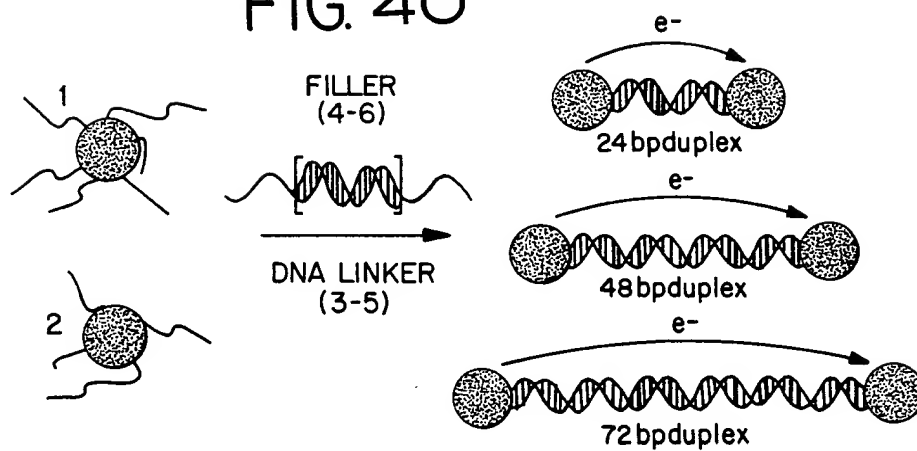


FIG. 41

